THE GAME BIRDS OF INDIA

PART I.

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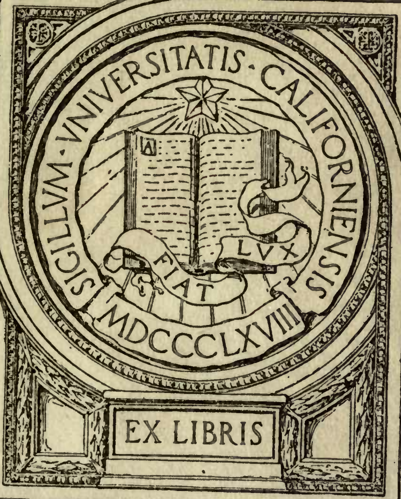
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A MANUAL OF THE GAME BIRDS OF INDIA.

A MANUAL

OF THE

GAME BIRDS OF INDIA.

Part I.—Land Birds.

BY

EUGENE W. OATES,

Author of
"A Handbook to the Birds of British Burmah;"
Vols. I. and II. of "The Fauna of British India: Birds;"
Editor of the Second Edition of Hume's
"Nests and Eggs of Indian Birds."

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PREFACE.

In the present small volume, I have attempted to give a brief but, I hope, sufficient account of some of the Indian Game Birds, and I propose to complete the account of the remaining Birds without undue delay.

Of the books which have been written on the subject of the Game Birds of India, the large illustrated work of Messrs. Hume and Marshall is at once the most comprehensive and the most important. It is, however, nearly twenty years since this work was published, and in the interval many species of Game Birds have been added to the Indian list.

The Catalogue of the Game Birds in the British Museum (vol. xxii.), written

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by Mr. Ogilvie Grant, and published by order of the Trustees, is a valuable work, and contains an account of all the Land Game Birds of the world, but it is of too technical a character to be of use to the mere sportsman.

A work of the same scope by the same author, but in a somewhat popular form, (a Handbook to the Game-Birds,) forming one of the series of "Allen's Naturalist's Library," has quite recently been published. This work is, however, too comprehensive for the requirements of the resident in India.

The forthcoming final volume of the Birds, in the "Fauna of British India," by Dr. W. T. Blanford, will include the Game Birds. This work is far too technical, however, for the ordinary sportsman, and moreover embraces other groups of birds with which the latter has no concern.

Altogether it seems to me that a small, handy manual, such as I have written, is required to bring our knowledge of the Indian Game Birds up to date and to suit the requirements of men who are more sportsmen than they are naturalists; and I have accordingly, since my return to England, devoted my leisure time to its preparation.

My object has been to make this volume as concise as possible, and to assign such characters to the various groups and to the individual species as can be easily understood. It has been my aim throughout to select characters which apply to both sexes without exception. This is, I believe, the first attempt yet made to render the identification of the female game birds easy. It is too much the practice to pass the females of this group over with a brief and insufficient description, or, when figuring them, to place them as small, and frequently unrecognisable, objects in the background.

Although a considerable time has passed since the large work of Messrs. Hume and Marshall was published, I regret to say that very little additional information regarding the habits of the

Game Birds has been published in the interval, and therefore, in my account of habits, my readers will recognise many familiar quotations from the above work, and from Dr. Jerdon's ever fresh and interesting articles. In writing of any large group of birds, no author can be expected to have a personal acquaintance with more than a mere fraction of the members composing it, and all he can do is to quote the best available notes regarding them.

I have derived so much information from the works of the above-mentioned authors, and from Mr. Ogilvie Grant's Catalogue, that it has been impossible for me to acknowledge such information separately in each particular instance. I can only express my great obligations now in a general way.

I have again had the privilege of carrying on my studies in the bird-rooms of the British Museum. The national collection of birds now contains nearly four hundred thousand specimens, of which about eight thousand illustrate the groups included in this volume. One cannot but admire the skill with which this stupendous collection is arranged and made available for reference and study. It ought to be the aim of every Englishman abroad, who devotes his attention to birds, to render this collection still more complete by presenting to it specimens of rare and little-known species.

My thanks are due to Sir W. H. Flower, the Director of the Natural History Museum, South Kensington, for allowing me free access to the bird collection; also to Dr. R. Bowdler Sharpe, the Assistant Keeper of the Vertebrate Section, and to Mr. W. R. Ogilvie Grant, his colleague in the Bird Department, for the assistance they have constantly and ungrudgingly given me.

EUGENE W. OATES.

1 CARLTON GARDENS,
EALING, LONDON.

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A MANUAL

OF THE

GAME BIRDS OF INDIA.

Part I.—Land Birds.

INTRODUCTION.

THE Game Birds of India which frequent the land, as distinguished from those which swim or wade, are eighty-eight in number, and are referable to five sections or orders, containing the following number of species :—

Sand-Grouse . .	8 species.
Hemipodes . .	5 ,,
Gallinaceous Birds .	68 ,,
Megapodes . .	1 ,,
Bustards . .	6 ,,

The characters which separate these five sections one from the other are very simple and easily understood. The following statement exhibits these characters :—

Sand-Grouse (p. 16). — The tarsus feathered, and sometimes the toes also.

Hemipodes (p. 55).—The tarsus bare; no hind toe.

Gallinaceous Birds (p. 70).—The whole or a large portion of the tarsus bare; with a hind toe situated above the level of the front toes.

Megapodes (p. 382).—The tarsus bare; with a hind toe situated on the same level as the front toes.

Bustards (p. 389). — Not only the tarsus, but also a portion of the tibia bare; no hind toe.

The limits of British India, as recognised by me, coincide with those employed by Dr. W. T. Blanford in the volumes of the "Fauna of British India." I include Ceylon for the same reason that led Dr. Blanford to include it in his volumes; its inclusion only adds two species to my list. With reference to the little-known and undefined territories in the extreme north-east of Assam and Burma, I have included all the country which is presumably British. Of this nature, in my opinion, are the Mishmi Hills, which appear to stand in the same category as the Kachin tracts in the extreme north of Burma, above Myitkyina. The limits of Burma, east of Bhamo, and of the northern Shan States are not yet properly defined and mapped out, and in the case of one or two birds which have been found in this debatable land, I have thought it preferable to include, rather than to exclude, them. By bringing them to notice, we may hope that sportsmen will direct their energies to the acquisition of specimens of these rare species.

On the other hand, while quite willing to give any species the benefit of a doubt, I am unable to include in my list two species noticed by Messrs. Hume and Marshall, which there is no reason to believe have ever occurred within Indian limits.

Of the eighty-eight species included in my list, forty are in Dr. Jerdon's work and seventy-six in that of Messrs. Hume and Marshall. Of the twelve species not treated of by the latter authors, eight are species discovered and named after the issue of their work; three are additions to the Indian fauna from surrounding countries; and one is a species of which they were in doubt at the time they wrote, but which appears to me to be quite valid.

I have tried to write for the sportsman rather than for the naturalist, and I have consequently avoided the use of technical terms. I believe I have employed no term which requires explanation.

Throughout this work the characters employed for the groups apply equally to the males and females, unless otherwise noted. When I finally arrive at the species, the difference between the male and female, if they differ, is then duly pointed out.

I have not dealt with the plumage of the immature bird. To have done so would have taken a great deal of space, and to very little purpose, for the plumage of the young is always undergoing a series of changes. Usually the young will be obtained in the company of the parents, and can thus be easily identified. It may be laid down as a general rule that the young male resembles the female parent till such time as it commences to assume the plumage of the adult male.

The description of the plumage in this volume is generally in considerable detail, but I have not thought it necessary to describe minutely the intricate coloration of the Quails, nor the complicated pattern of colours which frequently adorns the wing of many of the game birds. The measurements given are sufficient to afford an accurate idea of the size of a bird, and represent average measurements. The total length of a bird has frequently been taken from a skin, and may not be accurate, but no better information is available. The weights of the game birds have in almost all instances been taken from Messrs. Hume and Marshall's work. Most of the vernacular names are derived from the same source. All dimensions are in inches.

There is a point about which sportsmen may be inclined to disagree with me, and this is the alteration of name in some of the game birds. I have only done this when absolutely obliged. Many familiar names were conferred by Dr. Jerdon at a time when he had only a limited number of species to deal with. For instance, he treated of only two Hill-Partridges in his work, and he appropriately enough termed one the Black-throated, and the other the Red-throated, Hill-Partridge. But now that there are several Partridges of this group with red throats known to inhabit India, and more than one with a black throat, Dr. Jerdon's names are misleading and, in my opinion, require revision. I have similarly revised some of the names used by Messrs. Hume and Marshall.

In order that a change of name may cause as little trouble and inconvenience as possible to the sportsman who is accustomed to the older names, I append a table in which are shown in parallel columns the name used in this volume, the corresponding name used by Dr. Jerdon, and similarly the corresponding name employed by Messrs. Hume and Marshall, with a reference to the volume and page where these names may be found. This table will also serve as a systematic index. A blank shows that the bird concerned is not included in the work of Dr. Jerdon or of Messrs. Hume and Marshall, as the case may be.

I have not burdened my work with any synonymy, but I have applied to each bird the systematic name it bears in the "Catalogue of the Birds in the British Museum" (vols. xxii., xxiii.), except in a few instances where my reasons for differing from the author of the "Catalogue" are given at length. Such instances are very few.

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3. The Common Pin-tailed Sand-Grouse, p. 26.	The Common Sand-Grouse, p. 502.	The Common Sand-Grouse, vol. i., p. 69.
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THE SAND-GROUSE.

(PTEROCLETES.)

THE Sand-Grouse are well represented in India, where no less than eight species are met with.

They are essentially birds of large bare plains and deserts, and frequently occur in flocks of immense size, but more usually in small companies. They are birds of very strong and rapid flight. Their wings are long and pointed. Their legs are short, but they nevertheless run with ease. Their plumage is handsome, and the colours harmonise well with the soil, sand and stones, of the localities they frequent.

The Sand-Grouse make no nest, but deposit their eggs on the bare ground in any small depression. The eggs are elliptical in shape and much spotted. The young can run as soon as they are hatched.

All the species have the tarsus covered with short downy feathers. Some have the toes feathered in addition. A hind toe of minute size is present in some species, absent in others.

The Indian Sand-Grouse may be divided into three groups. In the first group (*Syrrhaptes*) the toes as well as the tarsus are feathered, and there is no hind toe. The Tibetan Pin-tailed Sand-Grouse is the only representative of this group.

The second group (*Pteroclurus*) contains three species. These have bare toes, a minute hindtoe, and the middle pair of tail-feathers prolonged to a narrow point. To this group belong the Eastern Pin-tailed, the Common Pin-tailed, and the Spotted Pin-tailed, Sand-Grouse.

The third group (*Pterocles*) contains four species. These have bare toes, a minute hindtoe, and the middle pair of tail-feathers of the ordinary shape, not prolonged to a narrow point. To this group belong the Black-bellied, the Coronetted, the Indian Painted, and the Close-barred, Sand-Grouse.

1. THE TIBETAN PIN-TAILED SAND-GROUSE.

Syrrhaptes tibetanus, GOULD.

Both tarsus and toes feathered.

MALE :—**Visible portion of the closed wing very minutely and almost imperceptibly vermiculated with black.**

FEMALE :—**Visible portion of the closed wing boldly barred with black, like the upper plumage.**

VERNACULAR NAME :—*Kuk*, Ladak.

THE Tibetan Pin-tailed Sand-Grouse occurs in Ladak and the upper portions of the Sutlej valley. It is a bird of high elevations, and Colonel Biddulph informs us that he found it in June at fully 18,000 feet, and in September at about 15,000 feet. Mr. Hume states that he never met with this species in summer below 12,000 feet.

Out of India this bird extends throughout Tibet to the borders of China on the east; its limit to the west is not known.

This fine Sand-Grouse frequents barren and desolate steppes and undulating semi-desert plains. Mr. Hume, writing of his own personal experiences of this bird, says :—" Both when feeding and taking its siesta, it is not uncommonly in considerable flocks (I have seen several hundreds together) ; but in summer, at any rate, it is perhaps more common to meet with it in little parties of from three to twenty. Whilst feeding, it trots about more rapidly and easily than its short feather-encased legs and feet would lead one to suppose ; individuals continually flying up and alighting a few yards further on, and now and again the whole flock rising and flying round, apparently without reason or aim. Sometimes it is very shy, especially in the early mornings and evenings ; and though it will not, unless repeatedly fired at, fly far, it will yet not let you approach within 100 yards ; but, as a rule, during the heat of the day, you may walk right in amongst them. . . . Early in the morning, and quite at dusk, they come down to the water to drink ; by preference to fresh water, but, as at the Tso-Khar, at times to quite brackish water. They are always noisy birds when moving about, uttering a call something like 'guk, guk,' to my ear, or again, as some people syllable it, 'yak-yak,' 'caga-caga,' etc., etc., but they are specially noisy in the evenings when they come down to drink."

Nothing is known about the breeding of this bird within Indian limits. In the British Museum, however, there are two eggs which were found on the Pamir by Mr. St. George Littledale, and which, although they have no further history, doubtless belong to this species. These eggs are perfectly elliptical, rather glossy, and measure, the one 1·9 by 1·37—and the other 2 by 1·33. They are of a light stone-colour with a number of pale purple shell-marks and numerous surface-dots and marks of reddish brown, evenly distributed over the egg.

The male bird has the front part of the head whitish, the sides of the head, throat and a collar yellow, the crown, neck, mantle and chest whitish barred with black. The back, rump and the tail-coverts are pale vinaceous buff vermiculated with black. The general aspect of the closed wing is vinaceous buff with very minute and almost imperceptible black vermiculations, and there are a few black marks on the feathers springing from the shoulders. The first ten quills of the wing are black. The middle tail-feathers are pale vinaceous, becoming black on the prolonged narrow portions; the others are chestnut barred with black and tipped with white. A broad band of pale grey extends across the breast; the belly and the sides of the body are white; the feathers under the tail chestnut, barred with black, and tipped with white.

The female has the upper plumage more coarsely barred with black than is the case in the male, and the whole of the visible portions of the closed wing and the feathers springing from the shoulders are closely barred with black. The breast as well as the chest are barred with black, and the grey breast-band of the male is absent. In other respects the female resembles the male.

Length nearly 16; wing nearly 10; tail about 8.

2. THE EASTERN PIN-TAILED SAND-GROUSE.

Pteroclurus alchatus, (LINNÆUS).

Leg feathered ; toes bare.
Middle tail-feathers elongated.
Belly entirely white.

MALE :—Throat black.
FEMALE :—Throat white.

VERNACULAR NAMES :—None known.

THE Eastern Pin-tailed Sand-Grouse visits India in the winter, and is found at that season principally in the Punjab and Sind. In the former province it has been found as far east as Delhi, and in the latter as far south as Karachi. It has also been procured near Sambhar. A few birds apparently remain in Sind throughout the year.

This bird occurs in Turkestan and through the countries of South-Western Asia to Palestine. To the west of this, it is replaced by a very closely allied species.

Mr. Hume writes of this species:—"Of all the Sand-Grouse that inhabit or visit India . . . . none habitually associate in such enormous flocks as the Pintail does during the cold season. Near Mardan I have seen flocks of at least ten thousand, and in Northern Sind I know that they similarly occur at times in countless numbers."

Mr. Dresser, speaking of the nearly allied species which occurs in Europe, says:—"In its habits the Pin-tailed Sand-Grouse does not appreciably differ from the Black-bellied Sand-Grouse. . . . It is shy and very wild, lives in large flocks except during the breeding season, and feeds on seeds, insects and the leaves of various wild plants. . . . When in flocks they frequently traverse great distances on the wing in search of water; and during their flight they utter their loud note, *Kaat*, *kaat ka*."

As before remarked, some of these birds remain in Sind perhaps as permanent residents, or if not, for a sufficient time to permit of nesting operations to be completed. In the Hume Collection there is a single egg of this species, on which it is recorded that it was found at Jeempoer (? Jhimpir) in Sind on the 10th

July, 1878. This egg, as is usual with the eggs of all the Sand-Grouse, is perfectly elliptical and glossy; the ground-colour is a warm buff; the shell-markings are pale purple and the egg is covered pretty evenly all over with dots and marks of reddish brown. It measures 1·7 by 1·15.

The male of this species has the chin, throat and a line behind the eye black; the crown grey; the sides of the head bright buff, and the forehead and neck greyish buff. The back and the feathers springing from the shoulder are olive-buff with yellowish patches. The outer part of the closed wing is chestnut with white margins, the inner part yellowish fringed with black. The first ten quills of the wing are grey, the outer web of the first being black; the next quills having much white on them. The rump and the tail-coverts are barred with black and yellow. The tail-feathers are more or less dark grey tipped with white, the prolonged portions of the middle feathers being black. The chest is pale rufous bounded above and below by a black band, and the belly and sides of the body are white.

The female has the whole upper plumage

rather bright yellowish buff barred with black, many of the feathers of the back, shoulder and wing with oval pale blue marks. The throat is white, and a streak passing over the eye and the sides of the head, and surrounding the throat, is yellowish buff. A black band proceeds from either eye down the neck, gradually widening and meeting the other in a broad band across the foreneck. This broad band is succeeded by a narrow buff line, and again by a broad grey band, which is again succeeded by a narrow black line. The chest is occupied by a very broad rufous band, margined below by black. The belly is white; and the tail resembles that of the male.

Length about 15; wing about 8½; tail about 6; legs dusky green; irides brown; bill brown or greenish. Weight up to 12 oz.

3. THE COMMON PIN-TAILED SAND-GROUSE.

Pterocluros exustus, (TEMMINCK).

Leg feathered; toes bare.
Middle tail-feathers elongated.
Belly more or less dark-coloured.
Dark colour of the belly extending to the sides of the body.

MALE:—Belly uniform chocolate-brown.

FEMALE:—Belly barred with chocolate-brown and fulvous.

VERNACULAR NAMES:—*Bur-titur*, *Bukht-titur*, *Kumar-tit*, *Kuhar*, Hind.; *Butabur*, *Batibun*, Sind; *Popandi*, Bhil; *Pakorade*, *Pokurdee*, *Pokundi*, Marathi; *Palki*, Belgaum; *Jam polonka*, Telugu; *Kal gowjal haki*, Canarese; *Kal-Kondari*, Tamil.

THE Common Pin-tailed Sand-Grouse is a permanent resident over a very large portion of the Indian Peninsula extending from the Punjab and Sind to Behar and Chutia Nagpur on the east (and even to Calcutta as a straggler), and down to

Mysore on the south. Throughout this large area it is found in all suitable localities, namely those in which the rainfall is small, the climate dry, the country open and more or less sandy, with ploughed land and fallow fields interspersed. It apparently shuns the hills.

Out of India this bird has a wide distribution over South-Western Asia and a portion of Africa.

Dr. Jerdon thus speaks of this bird. "It feeds chiefly in the morning, and between 8 and 9 a.m. goes to drink at some river or tank, at which, in some parts of the country, thousands assemble, and they may be seen winging their way in larger or smaller parties from all quarters at a great height, uttering their peculiar loud piercing call, which announces their vicinity to the sportsman long before he has seen them. They remain a few minutes at the water's edge, walking about and picking up fragments of sand and gravel, and then fly off as they came. In the hot weather, at all events, if not at all seasons, they drink again about 4 p.m. When they are seated on bare sandy or rocky ground they are most difficult to observe, from the similarity of their colour to the ground; sometimes they can be approached with ease, near enough to get a good shot, at other times, especially if in large flocks, they are shy and wary. A small flock or single birds can often be approached very close by walking rapidly, not straight, but gradually edging towards them; and, in this way, I have often walked up to within two or three yards of them."

The nesting places of these birds are in the drier and barer portions of the plains they frequent, but Colonel Butler observed them nesting near Deesa in grass *beerhs*, sometimes in the open, at other times under a tussock of grass. As Mr. Hume observes, the nests may be found in greatest numbers in scattered fallow or stubble or newly-ploughed fields dotted about on, and surrounded by, large semi-desert plains. They seldom make a nest, but lay their eggs, usually three in number, in a depression on the bare ground. They appear to breed at all seasons of the year, and probably rear two broods.

The eggs are regular ellipses, with a fine gloss. The ground-colour varies a great deal, but is generally of various shades of buff with sometimes a tinge of green. As usual, the eggs have two kinds of marks, the shell-marks being of a pale purple and the superior or surface-marks being olive-brown. These marks are of various sizes and shapes. The eggs average 1·45 by 1·03.

The male bird has the sides of the head, the throat and a ring round the neck yellowish buff; the crown and upper plumage fulvous brown. The visible portions of the closed wings are a clear buff with a few narrow chestnut-brown bars; the first five quills of the wing are black, the next five black tipped with white. The middle tail-feathers are fulvous with the prolonged portions black; the others more or less brown with pale fulvous tips. The chest and upper breast are pinkish buff followed by a narrow black band, and the lower breast is yellowish buff turning to chocolate-brown on the belly and the sides of the body. The feathers under the tail are creamy white.

The female has the throat and the sides of the head yellowish buff; the crown, the whole neck, the upper part of the mantle, the chest and the upper breast fulvous streaked or spotted wtth black. The remaining upper plumage and the visible portions of the closed wings are fulvous barred with black. The tail-feathers are black, barred and broadly tipped with fulvous, except the terminal portions of the middle feathers, which are wholly black. The first five quills of the wing are blackish, and the next five are black tipped with dull white. The lower breast is occupied by a broad unspotted fulvous band, the belly is fulvous barred with chocolate-brown, and the feathers under the tail are fulvous.

Length, up to 13; wing about 7; tail up to about 5½; legs bluish; irides brown; bill bluish. Weight up to nearly 10 oz.

4. THE SPOTTED PIN-TAILED SAND-GROUSE.

Pteroclurus senegallus, (LINNÆUS).

Leg feathered ; toes bare.
Middle tail-feathers elongated.
Belly more or less dark-coloured.
Dark colour of the belly confined to a large central patch, not extending to the sides of the body.

MALE :—**Whole plumage unspotted.**

FEMALE :—**Nearly the whole plumage spotted.**

VERNACULAR NAMES :—*Nandoo Katingo, Gutu*, Sind.

THE Spotted Pin-tailed Sand-Grouse is confined to the north-western portion of India, being found commonly in winter in Sind and Jeysulmere, and less commonly in the Punjab and Rajputana.

The most northerly locality where it has been procured is Shahpur on the Jhelum river, and the most easterly, Jodhpur. To the south it extends to

Cutch and Northern Guzerat. In the British Museum there is a specimen which is said to have been obtained by Colonel Swinhoe at Mhow, probably by mistake, as this naturalist does not include this bird in the list of birds of Central India which he wrote conjointly with the late Lieut. H. E. Barnes, in the *Ibis* for 1885.

This Sand-Grouse extends through S. W. Asia to Northern Africa.

Mr. Hume observes :—"Numerous as the Spotted Sand-Grouse are in certain localities in Sind, they are, as a rule, only met with within a comparatively narrow zone : that within which the inundation tracts abut on the dry uplands, and cultivation and desert inosculate. In the immediate neighbourhood of the hills themselves I never saw them, except in parties, coming up for a few minutes to drink at some perennial stream, close to where it debouches from the hills ; and again I equally missed them well down into the heart of the cultivated area. . . . . Their note is peculiar, and has been happily described as a gurgling sound, not unlike that produced by blowing through a small tube, one end of which is immersed in water. It has been syllabled as *quidle*, *quidle*, *quidle*, and this really does recall the note to a certain extent."

There can be little doubt that this Sand-Grouse breeds in Sind; and it probably breeds in other localities in India, for Mr. R. H. C. Tufnell informs us that these birds were extremely plentiful in the August of one year at Rajanpur on the Punjab frontier.

Mr. Hume thus writes of a single egg of this species, which I regret to say is no longer in his collection:—"A single egg of this species I owe to Mr. William T. Blanford, who extracted it from the body of a female which he shot on the 20th March, 1875, in the desert west of Shikurpur, Upper Sindh. In shape and size the egg is similar to that of *P. exustus*, but the markings are much more sparse than in any egg of that species that I have ever seen. The egg is of course cylindro-ovoidal, the ground-colour is a pale yellowish stone-colour, and the markings, which are thinly distributed over the surface of the egg, consist of olive-brown spots and tiny blotches with a few crooked and hooked lines; besides these, a few pale lilac-purplish or inky grey spots, streaks and smears having a sub-surface appearance are scattered irregularly about the surface of the egg. Having been extracted from the body of the bird, the egg has of course but little gloss. It measures 1·5 by 1·05."

The male has a broad grey band on each side of the head, the two bands meeting behind the crown. The whole upper plumage is fulvous brown tinged with ochraceous yellow over the tail; and the visible portions of the closed wing are a mixture of bluish grey and buffy yellow, this last forming margins and tips to the feathers. The quills of the wing are pale fulvous brown with black shafts and a broad blackish band near the tip of each feather which is narrowly whitish. The throat, the sides of the head and a portion of the sides of the neck are rather bright saffron-yellow. The whole lower plumage is pale fulvous brown with a large black patch on the middle of the belly. The middle tail feathers are fulvous ending in black and the others are greyish brown broadly tipped with whitish. The feathers under the tail are white.

In the female, the whole upper plumage, the visible portions of the closed wing, the sides of the neck, the foreneck and the chest are pinkish brown thickly covered with round black spots. The throat, the sides of the head and a portion of the sides of the neck are pale yellow. The band surrounding the crown, which in the male is grey, is, in the female, a much paler grey marked with a few black spots. The lower plumage is pinkish brown with a large black isolated patch in the middle of the belly. The tail resembles that of the male.

Length about 13; wing about 7½; tail about 5; legs bluish; irides brown; bill bluish. Weight up to 12 oz.

5. THE BLACK-BELLIED SAND-GROUSE.

Pterocles arenarius, (PALLAS).

Leg feathered ; toes bare.
Middle tail-feathers not elongated.
Belly uniform deep black.

MALE :—Foreneck and breast unspotted.

FEMALE :—Foreneck and upper breast spotted.

VERNACULAR NAMES :—*Bukht-titar*, *Bur-titar*, *Bakht-tit*, *Bukht*, Hind. ; *Ban-chur*, *Kurmor*, at Peshawar ; *Kashmiri*, *Burra Bhatta*, Hariana and Bhattiana ; *Katinga*, Sind.

THE Black-bellied Sand-Grouse is found in India during the winter months only. It arrives generally in October, but occasionally in the latter part of September, and leaves again in March ; but the length of its stay in any one district is dependent a good deal on temperature and other causes.

This bird is found throughout the north-western part of India from the

Punjab and Sind to Oudh and Bundelkhand, the northern portion of the Central India Agency, Khandesh and Guzerat. It is most abundant in the Punjab and Rajputana. Mr. Hodgson sent it from some part of Nepal, and Colonel Biddulph met with it near Gilgit in December.

It occurs in Turkestan, S. W. Asia, Southern Europe and Northern Africa.

These Sand-Grouse occur in large flocks and in some parts of the country in countless multitudes. Mr. Hume thus describes their habits: "Ploughed land is a very favourite resort in the early mornings, and there they squat basking in the sun's earliest rays, huddled up so close together and, where the party is large, in such dense masses, that large numbers may be bagged with a couple of charges of large shot, if one is only lucky enough to approach within 50 yards. . . . Wide, open, sandy plains are their favourite resorts; and, though they do sometimes feed on bare ploughed lands, it is rare to find them on these except when basking in the early morning or when taking their midday siesta. This, like all the Sand-Grouse, they always take when the sun is hot, though on cold, cloudy, gloomy days, they are moving the whole day. They bustle about in the sand or loose loam like old hens until they have worked out a depression that fits them, and then in this they sit a little on one side, first with one wing a little under them and the uppermost one a little opened, and then, after a time, they shift over to the other side, so as to give the other wing its turn of grilling. . . . It is not uncommon, particularly in the early part of the cold season, to meet with party after party consisting of birds of one sex only; but this separation of the sexes is by no means invariable even in November and December, and is much less frequently seen as the season advances. . . . Every one in India knows the peculiar clucking note of this and the Common Sand-Grouse, but I really do not know how to put it on paper."

This Sand-Grouse has not yet been known to nest in India, but in the Hume Collection there is an egg which was found by the late Lieut. H. E. Barnes at Chaman, in Southern Afghanistan; it is therefore not improbable that the eggs may hereafter be found within our limits.

The British Museum possesses a fine series of the eggs of this bird from Asia Minor, Algeria, and Spain. They are as usual elliptical and very glossy. The ground-colour varies from light stone-colour to buff. The underlying shell-marks consist of blotches of very pale purple, and the surface-marks are reddish brown in some cases, plain brown in others. These surface-marks vary in size from dots and small spots to blotches and smears of considerable size, and they are in all cases pretty evenly distributed over the egg. In size the eggs vary from 1·7 to 2 in length, and from 1·25 to 1·35 in breadth.

The male bird has the crown and the back and sides of the neck brownish grey. The upper plumage is mingled dark grey and fulvous, the feathers being grey with broad fulvous tips, and there is a large patch of fulvous on the wing. The quills of the wing are dark slaty. The tail-feathers are fulvous barred with black and ashy and broadly tipped with white. The throat is chestnut, and this colour extends down the neck and is bounded by a black band. The foreneck and breast are fulvous grey, and a black band crosses the middle of the breast. The belly and the sides of the body are deep black, and the thighs and the feathers under the tail are white.

The female has the crown, the sides of the head, the back and sides of the neck fulvous streaked with black; the remaining upper plumage fulvous irregularly barred with black; but, as in the male, there is a large patch of unbarred fulvous on the wing. The quills of the wing are pale slaty, each with a whitish terminal margin. The tail resembles that of the male. The throat is pale yellow, which colour extends to the sides of the neck, these parts being marked with a few tiny black streaks. The yellow on the throat is bounded by a black band followed by a grey patch. The foreneck and the upper breast are fulvous spotted with black, succeeded by an interrupted black band, below which a portion of the breast is plain fulvous. The belly and the sides of the body are deep black, and the thighs and the feathers under the tail are white.

Length about 14; wing about 9; tail from 4 to 5; legs grey; irides brown; bill bluish. Weight up to 20 oz.

6. THE CORONETTED SAND-GROUSE.

Pterocles coronatus, LICHTENSTEIN.

Leg feathered ; toes bare.
Middle tail-feathers not elongated.
Belly barred or of a uniformly pale colour.
Shaft of the first quill of the wing white.
Feathers under the tail unbarred.

MALE :—**Portion of the throat black.**
FEMALE :—**Entire throat pale yellow.**

VERNACULAR NAME :—*Katinga*, Sind.

THE Coronetted Sand-Grouse is a comparatively rare visitor to the north-west of India, and has been observed only in Sind, west of the Indus river, and along the Punjab frontier at Dera Ghazi Khan, and at Fort Jamrud near the mouth of the Khyber Pass, where two birds of this species were shot by Dr. Julian Smith in October, as recorded in "Stray Feathers," by Lieut. W. W. Lean.

This species is found in Afghanistan,

Baluchistan, Kashgar and Persia, extending through Arabia to Africa.

I can find very little regarding the habits of this Sand-Grouse. The late Sir O. B. St. John remarked of this species:—"This is the only small Sand-Grouse of Southern Afghanistan, and is very generally diffused though nowhere numerous. It is commonly seen in small parties of half a dozen or so, and is more active on the ground than other Sand-Grouse, running about and picking up seeds like a Partridge, whereas *P. alchata* and *P. arenarius* are leisurely and staid in their gait. It breeds in the Helmund Desert, for I found it common between Kandahar and the river in July."

Mr. Hume has the following note:—"Sir William Merewether tells me that the flight and cry of *P. coronatus* are both quite different from those of all the other species. They have a curious fluttering flight and appear often to hover in the air, especially before settling, and their cry is a twittering one."

Lieut.-Col. J. M. Anderson informs us that he shot several *Pterocles coronatus* in October in the western desert near the hills of Karachi: they were in flocks of from six to twenty and very tame:

very different, he adds, to the *P. arenarius*, which he found one of the most difficult of birds to approach.

In the Hume Collection there is a single egg of this species which was taken at Chaman in South Afghanistan by the late Lieut. H. E. Barnes on the 27th May, 1880. It is perfectly elliptical and very glossy. The ground-colour is a pale ashy, and it is covered, pretty equally all over, with pale purple shell-marks and brown surface-spots and marks. It measures 1·6 by 1·05.

The male bird has a portion of the throat and the sides of the forehead black; the middle of the forehead white; the crown rather bright fulvous brown or cinnamon-colour completely surrounded by a broad coronet of grey; the lower portion of the throat, the sides of the head and a collar round the neck saffron-yellow. The upper plumage and the visible portions of the closed wings are various shades of fulvous brown mixed with brown and fulvous, this last forming broad oval tips to the feathers. The quills of the wing are dark brown, all but the first three or four tipped with fulvous. The middle tail-feathers are fulvous, the others fulvous with white tips, preceded by a black bar. The lower plumage is pale fulvous or buff, the breast generally tinged with grey. The feathers under the tail are white.

The female has every portion of the upper plumage, together with the visible portions of the closed wings, fulvous streaked or barred with dark slaty. The quills of the wing are dark brown, all but the first three or four tipped with whitish. The tail-feathers are fulvous barred with black and tipped with white. The sides of the head are grey; the throat, extending to the sides of the neck and forming a collar, very pale saffron-yellow. The lower plumage is pale fulvous irregularly barred with dark slaty, the bars being strong and frequent on the breast, but interrupted and few on the belly. The feathers under the tail are white.

Length about 11; wing about 7; tail up to 3½. The weight of the bird shot at Fort Jamrud, as mentioned above, was 8½ oz.

7. THE INDIAN PAINTED SAND-GROUSE.

Pterocles fasciatus, (SCOPOLI).

Leg feathered; toes bare.
Middle tail-feathers not elongated.
Belly barred.
Shaft of the first quill of the wing brown.
Feathers under the tail barred.
Feathers of the tarsus barred.
Throat unspotted.

MALE:—**With a black band across the forehead.**

FEMALE:—**With no black band across the forehead.**

VERNACULAR NAMES:—*Pahari bhut-titur*, *Bhut-bun*, N. W. Provs.; *Palki*, Belgaum; *Handeri*, S. India; *Kal Gowjal haki*, Canarese; *Sunda polanka*, Telugu.

THE Indian Painted Sand-Grouse is the only bird of this section the range of which is restricted to India. The limits of this species as given by Mr. Hume are the

12th degree of north latitude on the south and the 85th degree of east longitude on the east. It extends north and west of these two lines to the extreme northern limits of the Punjab and to the eastern borders of Sind. Mr. Hodgson sent it from Nepal.

Throughout this large area it is a permanent resident, but appears to be very local, affecting chiefly the neighbourhood of dry hills. Mr. Hume has the following remarks on the distribution of this bird:—"It is very local in its distribution, and is chiefly found, so far as my experience goes, on or about the bases and in the neighbourhood of dry, low, rocky, bush-clad or sparingly-wooded hills. In parts of the country, however, I have found it affecting the high *Kheyras* or mounds of deserted villages, met with in many jungles, and there are forest tracts in which the ground is stony and a good deal broken up by ravines in which it is particularly abundant. It is of course entirely unknown in low, rich, unbroken alluvial plains."

Dr. Jerdon makes the following observations:—"It affects chiefly bushy and rocky hills, and, unlike any others of its genus, is often found in tolerably thick cover. It is found generally in pairs, occasionally towards the end of the rains in parties of eight to ten; when flushed rises with a low chuckling call, takes a short flight at no great elevation and drops into cover again. I have very rarely seen it among rocks where there was little or no jungle."

It may be added to the above remarks that this bird seems to fly about and to go to drink at a very much later hour in the evening than the other species of Sand-Grouse.

These Sand-Grouse appear to nest at all times of the year, but April and May seem to be the months in which most nests are to be found. The nest is generally a mere hollow scraped in the ground, and is often under the shelter of a bush or a tuft of grass. As a rule three eggs are laid, but sometimes only two. The eggs are very beautiful; they are elliptical in shape and very glossy. The ground-colour is salmon-pink, and the whole egg is covered, generally more thickly at one end than the other, with pale purple shell-marks and reddish brown surface-spots and blotches. A large number measure from 1·3 to 1·6 in length and from 0·93 to 1·05 in breadth.

The male has a black band on the forehead with some white in front and behind it; there is a black spot over the eye, and the crown is buff mottled with black. The throat, the sides of the head and the whole neck are yellowish buff, bounded below by a broad chestnut band succeeded by a wider yellowish band. The upper plumage is black barred with buff on the back, rump and tail, and with white on the wings; a large patch on the wing being plain buff. The quills of the wing are dark brown. The belly and sides of the body are barred with black and white, the black bars being everywhere about as broad as the white ones. The feathers under the tail are buff barred with black, and the small feathers on the tarsus are pale buff barred with brown.

The female has the forehead and crown fulvous mottled with black. The whole upper plumage, the tail and the visible portions of the closed wings are fulvous closely barred with black; a large patch on the wing plain fulvous. The quills of the wing are dark brown. The throat and the sides of the head are yellowish buff. The lower plumage is barred with black and pale fulvous, the black bars being much narrower than the fulvous interspaces on the breast, but of about the same width on the belly. The feathers under the tail are buff barred with black and the small feathers of the tarsus are buff barred with brown.

Length about 10½; wing 6½; tail about 3½; legs yellowish; irides brown; bill reddish brown. Weight up to about 7½ oz.

8. THE CLOSE-BARRED SAND-GROUSE.

Pterocles lichtensteini, TEMMINCK.

Leg feathered ; toes bare.
Middle tail-feathers not elongated.
Belly barred.
Shaft of the first quill of the wing brown.
Feathers under the tail barred.
Feathers of the tarsus unbarred white.
Throat spotted.

MALE :—**With a black band across the forehead.**

FEMALE :—**With no black band across the forehead.**

VERNACULAR NAMES :—*None known.*

THE Close-barred Sand-Grouse has as yet only been found in Sind, west of the Indus river, from Mehur, where Mr. Hume first met with it, down to Karachi. It has been procured in the months of January, February and March.

This bird occurs in Baluchistan and Arabia, extending into Africa.

The occurrence of this Sand-Grouse in India is so rare that I can find no note on the species by any Indian sportsman, and I am obliged to quote the remarks of sportsmen who have met with it in Arabia and Africa. Major Yerbury, who procured this bird near Aden, has a brief note in which he informs us that when he first met with it, he saw a flock consisting of from eighty to a hundred individuals; subsequently he found it in small flocks of four or five birds. Dr. W. T. Blanford, who became well acquainted with this species in Abyssinia, has some very interesting information to give about it, and I shall quote the whole of his remarks:—"This bird has precisely the same habits as the closely allied *Pt. fasciatus* of India. It is rarely if ever seen on open sandy plains; like *Pt. exustus*, it keeps to bush and thin tree jungle, and is usually found solitary, in pairs, or at the most two or three pairs together. I once came upon a considerable flock in January, and possibly at that time these birds may collect in large numbers; but in May, June, July and August, it was rare to see more than four together, except about watering-places. When disturbed, the Sand-Grouse rises with a sharp cackling cry, affording a very difficult shot. It does not rise high, and usually settles again after a short flight. All kinds of *Pterocles*, as is well known, fly to water at particular hours in the day, the hours varying with different species. *Pt. exustus* drinks about 9 a.m. and 4 p.m. In the present case the drinking hours are at daybreak in the morning, and at dusk in the evening, as is also the case with the Indian *Pt. fasciatus*, the crepuscular habits of which are mentioned by Jerdon ('Birds of India,' vol. ii., p. 498), and have been noticed by myself also. In the semi-desert country west and north-west of Massowah, in which *Pt. lichtensteini* abounds, and there are but very few places where water is found, the scene at each spring of an evening, after a hot day especially, is very interesting. At Saati, Ailat, and Ain, there was a constant rush of these birds from sunset till dark, and again in the morning before sunrise. Singly and in small flocks, uttering their peculiar '*queep-queep*'-like note, they flew up and down the watercourse, on their way to and from the water, keeping only a few feet above the bushes and low trees; the noise of their wings being heard in the dusk before the birds themselves appeared. Like all other Sand-Grouse, they are excellent eating, the flesh being rather hard but of delicious flavour; and our party used generally to shoot a few each evening—not an easy matter, for the great swiftness and power of wing possessed by these birds rendered them, in the dusk especially, by no means an easy shot."

I cannot find any note regarding the nesting of this species.

The male has a black band across the forehead with some white in front and behind it. The crown of the head is pale fulvous streaked with black; the throat, the sides of the head and the neck all round pale fulvous spotted with black. The whole upper plumage, and the visible portions of the closed wings and tail are pale fulvous barred with black, the tips of the tail-feathers being bright yellowish buff. The quills of the wing are brown. The breast is yellowish buff with a chestnut band across it. The belly, the sides of the body, and the feathers under the tail are white barred with black, the black bars being much narrower than the white interspaces. The feathers on the tarsus are white without bars.

The female has the whole head and

neck pale fulvous spotted with black, the throat whitish spotted with black. The whole plumage is fulvous, darker above and paler beneath, every portion closely barred with black. The quills are dark brown. The feathers of the tarsus are pure white.

Length about 10½; wing about 7; tail nearly 3; legs yellow; irides brown; bill brown. Weight about 8 oz.

THE HEMIPODES OR THREE-TOED QUAILS

(HEMIPODII).

THE Hemipodes, which are familiarly known in India as Bustard- and Button-Quails, have the external appearance of the True Quails, but differ from them and from all the Gallinaceous birds by the absence (as far as the Indian species are concerned) of a hind toe. They are therefore easily recognised by this character, and their small size.

It is a remarkable fact in the history of these birds that the females are larger and more handsomely coloured than the males. These latter moreover perform all the duties of incubating the eggs and rearing the young, while the females remain idle, or fight amongst themselves for the possession of the males.

The eggs of the Hemipodes are pyriform in shape and very richly coloured. The young can run as soon as they are hatched.

In the Hemipodes the wing is fairly pointed, but nevertheless these birds do not fly well. The tail is extremely feeble, short and pointed, and is quite concealed by the coverts. There is no spur on the leg.

Of the five species of three-toed Quails found within Indian limits, the first two on my list are very distinct from each other and from the last three. These latter resemble each other very closely. In determining these species we must first of all be guided by locality. If the locality be not known, then we must be guided by size and colour. Blanford's Button-Quail is conspicuously larger than the other two, so much so that I think it may be separated by this one character of size alone. The remaining two species are of much the same size, and they can be separated only by colour. In the Indian Button-Quail the plumage is dull with very little rufous in it, whereas in the Nicobar Button Quail the plumage has a considerable amount of bright rufous in it.

9. THE BUSTARD-QUAIL.

Turnix pugnax, (TEMMINCK).

Breast with numerous and well-defined black cross-bars.

MALE :—Throat whitish.
FEMALE :—Throat black.

VERNACULAR NAMES :—*Gulu*, *Gundlu*, *Salui-gundru*, Hind. ; *Pured* (female), *Koladu* (male), Telugu ; *Kurung-Kadeh* (female), *An-Kadeh* (male), Tamil ; *Durwa*, Ratnagiri ; *Karehaki*, Canarese ; *Timokpho*, Lepcha ; *Tiniok*, Bhutia ; *Ngôn*, Burmese.

THE Bustard-Quail is found in Ceylon and throughout Continental India except Sind and the country north of the Sutlej river, where it does not appear to have been met with. It occurs in the Himalayas from Nepal eastwards, up to a level of about 7000 feet. It is met with throughout the eastern part of the Empire quite down to the extreme south of Tenasserim, eastwards through the Shan States to China and Siam, and southwards down the Malay peninsula to Singapore. Mr. Hume states that this species moves to a small extent, ascending the hills in summer, and temporarily quitting flooded districts.

A race of this Quail is found in the south-west of Ceylon. The female of this race has a rufous nuchal collar.

The Bustard-Quail frequents open country and the outskirts of forests, and is generally found in scrub-jungle, waste lands, gardens and orchards. It occurs singly or in pairs. It rises almost at one's feet, takes a short flight and quickly descends into cover, where it is quite useless to attempt to flush it a second time. The female has a low note which appears to be uttered only at the nesting season. The mate is silent so far as is known. As usual with these birds, the cock bird incubates the eggs and looks after the chickens when hatched.

The nesting season is generally from June to September, even extending into October, but in Ceylon this bird nests from February to May. The nest is a hollow scratched in or near a tuft of grass, sometimes lined with grass and occasionally further improved by the addition of a canopy or hood. The number of eggs is often three, more commonly four, and occasionally five. The egg is pyriform in shape, very rounded at one end and abruptly and sharply pointed at the other, and it is generally very glossy. The ground-colour is a greyish white, and the whole egg is thickly covered with dots, specks and blotches of yellowish, reddish brown and dark brown or black. The average size of a considerable number of eggs is ·94 by ·78.

The male has the upper plumage a mixture of rufous, black and buff, the proportion of each colour varying greatly in individuals. The chin and throat are whitish, and the lower plumage buff, the foreneck and the whole breast being strongly barred with black.

The female resembles the male, but has the whole chin, throat and foreneck black.

Length up to 6½; wing up to 3½; tail a little more than 1; legs bluish; irides whitish; bill plumbeous. Weight up to 2¼ oz.

10. THE LITTLE BUTTON-QUAIL.

Turnix dussumieri, (TEMMINCK).

No bars across the breast.
Tail-feathers margined with buff, and the middle pair lengthened and pointed.

Sexes alike.

VERNACULAR NAMES: — *Ghinwa-Lowa*, *Chota-lowa*, *Dabki*, *Tura*, Hind.; *Chimnaj*, Muttra; *Libbia*, Purneah; *Tatu-butera*, Sind; *Durwi*, Marathi; *Chinna* (or *Tella*)*'dabba gundlu*, Telugu; *San gundlu*, Orissa; *Ngôn*, Burmese.

THE Little Button-Quail has a very wide distribution, but its exact limits are not known with much certainty. It occurs in the Punjab and Sind, and thence eastwards to Bengal and southwards to Mysore. It is found in the Himalayas (up to an elevation of about 6000 feet) from Simla to Sikhim and probably on to Assam. It has been procured in the Khasi hills, and I obtained a couple of birds near the town of Pegu, so that it is perhaps a resident in all the tract of country east of the Bay of Bengal as far south at least as Pegu.

It has been found in the islands of Hainan and Formosa, and it probably occurs in China and Siam.

This small Quail frequents open tracts of country covered with grass and scrub jungle, neglected and weedy gardens, and the outskirts of cultivated land. It occurs singly or in couples, rises only when hard pressed, and then flies a very short distance, and it is almost impossible to flush it a second time. It is said by Jerdon to have a low plaintive moan of a single note.

It is probable, as suggested by Mr. Hume, that this Quail is only a seasonal visitor to the dry countries of the North-West, and it appears to be only a summer visitor to the Himalayas. In suitable localities, however, in the greater part of India, it is no doubt a constant resident.

This little Quail nests according to locality from April to November. The nest appears to be only a pad of grass placed in a hollow or a hoof-mark, but is occasionally more elaborate, for the late Lieutenant H. E. Barnes described one he found as being "small, cup-shaped, composed of grass stems and roots, lined with a few hairs." The eggs are either four or five in number, and resemble those of the Bustard-Quail, but are smaller. They measure from ·81 to ·89 in length, and from ·63 to ·68 in breadth.

The male and female resemble each other in the colour of the plumage, but the latter is the larger bird. The upper plumage and the visible portions of the closed wings are rufous or pale chestnut, finely barred with black, and each feather margined with creamy yellow, these margins being broadest on the wings and very conspicuous, causing the upper plumage to appear streaked. Many of the coverts of the wing have a spot of chestnut and black combined. There is a pale stripe down the middle of the crown. The tail-feathers are margined with buff. The throat is whitish, and the foreneck and middle of the breast rufous. The sides of the neck and of the breast are covered with round brown or blackish spots. The belly is plain buff.

Length nearly 6; wing 3; tail nearly 1½; legs pale plumbeous; irides yellow; bill varying from whitish to plumbeous. Weight up to 1½ oz.

11. THE INDIAN BUTTON-QUAIL.

Turnix tanki, BLYTH.

No bars across the breast.
Tail-feathers plain, not margined ; the the middle pair neither lengthened nor pointed.
With a very small amount of dull rufous on the upper plumage.
Wing of male about 3 ; of female about 3½.
Inhabits the Indian peninsula.

MALE :—**Without a rufous collar.**
FEMALE :—**With a rufous collar.**

VERNACULAR NAMES : — *Lowa*, Upper India ; *Pedda dubba gundlu*, Telugu.

THE Indian Button-Quail appears to be found throughout the whole peninsula of India, from Travancore on the south to the Punjab and Sind on the west and to Tipperah on the east. It occurs in the Himalayas, probably during the summer only, up to about 4000 feet. In other parts of India it is probably a permanent resident.

This is such a skulking and inconspicuous game bird that few persons trouble themselves about it, and consequently details as to its distribution are wanting, but there can be little doubt that it is pretty evenly distributed over the whole of India, hills and plains alike. This bird is usually found in pairs or singly, and it frequents open country, living in clumps of grass, cultivated fields and patches of scrub-jungle. When flushed it rises and skims over the grass or bushes which may be in its way and drops suddenly, after which it can seldom be flushed again. This Quail appears to be a silent bird.

Few nests of this Quail have been found, and the Hume Collection contains only seven of its eggs. Four of these, from Mysore, were found on the 29th April, one from Raipur in June and one from Sialkot on the 26th August. The seventh egg is without particulars, except that it was found at Raipur. These eggs are pyriform and very glossy. The ground-colour of all is a yellowish white, and the eggs are thickly covered with specks and blotches of pale purple, black and reddish brown, and in all the marks are more thickly collected at the blunt end. They measure from ·84 to ·98 in length and from ·63 to ·77 in breadth.

The male has the crown of the head black, the feathers edged with buff; but as a rule, there is no well-defined coronal streak. The upper plumage is greyish brown, mottled and vermiculated in varying degrees with black and a little rufous, and many of the feathers tipped with buff; the smaller feathers of the wing with a black spot and creamy yellow tip. The throat is whitish. The foreneck and the middle of the breast are rufous, and the sides of these parts are covered with roundish black spots. The belly is pale buff. The tail-feathers are quite plain, without any trace of margins.

The female resembles the male, but has the rufous of the foreneck continued round the neck as a collar.

Length about 6; wing of female about 3½, of male 3; tail rather more than 1; legs yellow; irides white; bill mostly yellow. Weight about 1½ oz.

12. THE NICOBAR BUTTON-QUAIL.

Turnix albiventris, HUME.

No bars across the breast.
Tail-feathers plain, not margined, the middle pair neither lengthened nor pointed.
With a considerable amount of bright rufous on the upper plumage.
Wing of male about 3; of female about $3\frac{1}{4}$.
Inhabits the Andaman and Nicobar Islands.

MALE :—Without a rufous collar.
FEMALE :—With a rufous collar.

VERNACULAR NAME:—*Mool*, Nicobarese.

THE Nicobar Button-Quail occurs in the Nicobar Islands, where it was observed by Mr. Hume's party in the islands of Bompoka, Camorta and Tiressa; and in the Andaman Islands, where specimens were obtained at Port Blair and at Port Mouat in the South Andaman.

Mr. Hume observes that this Quail " is

never found in the forest, only in the open grassy uplands which constitute the distinctive character of the scenery of the Nicobars, or in gardens or cultivation surrounded by, or adjacent to, these."

Nothing has yet been ascertained about the nesting of this Quail.

The male and female of this species resemble respectively the male and female of the Indian Button-Quail, but the rufous of the upper plumage is very bright; the foreneck and middle of the breast in both sexes together with the collar of the female are rather bright chestnut.

Length about 6; wing of female about 3¼; wing of male about 3; tail rather more than 1; legs yellow; irides whitish; bill more or less yellow. Weight up to 1¾ oz.

13. BLANFORD'S BUTTON-QUAIL.

Turnix blanfordi, BLYTH.

- No bars across the breast.
- Tail-feathers plain, not margined, the middle pair neither lengthened nor pointed.
- Wing of male about 3½; of female, approaching 4.

MALE:—Without a rufous collar.

FEMALE:—With a rufous collar.

VERNACULAR NAME:—*Ngôn*, Burmese.

BLANFORD'S Button-Quail, which may be distinguished from the Indian Button-Quail by its greater size and richer coloration, is found throughout the whole of the countries east of the Bay of Bengal from about the longitude of Tipperah. To the south it extends quite to the extreme limits of Tenasserim, and to the east to the frontiers of Siam and China. It is found not only in the plains, but also on the hills up to an elevation of about 5000 feet.

The habits of this Quail do not appear to differ from those of its allies. On a former occasion I wrote: "This Quail is almost invariably found about gardens in the jungle, singly or in pairs. I have shot it also in bamboo jungle where there was an undergrowth of grass. It is less common on the hills than in the plains. On the whole this is perhaps the most abundant and universally distributed of all the Quails of Burmah; but nowhere will enough be found to furnish sport. It is hard to flush, flies only a few yards, and can never again be discovered."

The nesting habits of this Quail do not appear to be known.

The male and female of this species resemble respectively the male and female of the Indian Button-Quail in plumage, but there is more black and rufous on the upper plumage, which is thus of a richer colour. The present species is also a much larger bird.

Length nearly 7; wing in female nearly 4, in male about 3½; tail about 1½; legs yellow; irides white; bill brown with some yellow near the gape. Weight up to 2¾ oz.

THE GALLINACEOUS BIRDS.

GALLINÆ—ALECTOROPODES.

The Gallinaceous Birds embrace those Game Birds which have a foot resembling that of the domestic fowl, and comprise the Quails, Partridges, Pheasants, Pea-Fowl, and some other groups, more or less peculiar to India.

The Gallinaceous Birds differ so remarkably among themselves in appearance and structure that no general description of these birds can be given. I have found it equally impossible to divide them into a few large groups by any definite characters. The line of demarcation between two such groups, for instance, as the Partridges and the Pheasants is purely arbitrary, especially when we have to deal with a number of Indian species which connect by a chain of links the typical Partridge and Pheasant of the sportsman.

The division of this large section of birds, comprising sixty-eight species, is rendered still more difficult by reason of the great difference which exists in the form and plumage of the two sexes of many of the species.

In order therefore to render the identification of both sexes of these game birds as easy as possible, I have found it necessary to make use of a considerable number of small natural groups, which are designated, in almost all cases, by names familiar to the Indian sportsman.

Each of these groups is defined by a combination of a few simple characters, and no combination is common to two groups. Should the sportsman, therefore, meet with a game bird of this section with which he is unacquainted, his first step will be to find from the following statement the group to which it belongs. I believe he will have no difficulty in locating the bird, whether it be an adult cock or hen or a fully grown young bird.

For further particulars regarding the structural characters of each group, the reader is referred to the introductory article on each group.

SYNOPSIS OF THE GROUPS OF GALLINACEOUS BIRDS TREATED OF IN THIS WORK.

Quails.—Of very small size; length under 8½ inches; tail short and pointed, the feathers concealed, involved, and not readily separable from each other; the sides of the body streaked, or, when this is not the case, the outer web of the first ten quills of the wing unmarked. Of wide distribution. P. 78.

Bush-Quails.—Of very small size; length barely over 7 inches; the sides of the body never streaked, and the outer web of the first ten quills of the wing always marked. Of wide distribution. P. 99.

Mountain-Quails.—Of medium size; length between 9 and 10 inches; tail 3 inches long, the 10 feathers large, exposed to view, readily separable from each other, and not involved as in the Quails. The Himalayas. P. 119.

Wood-Partridges. — Rather smaller than an English Partridge; the claw of the hind toe not developed, but presenting the appearance of being shorn off close to the tip of the toe. Southern Tenasserim. P. 125.

HILL-PARTRIDGES.—About the size of an English Partridge; the throat or neck, or portions of either or both, spotted or streaked; the sides of the body with large white spots or with a partially concealed and very large patch of downy white feathers; no spur on the leg. The Himalayas and the Indo-Burmese countries. P. 131.

FRANCOLINS.—About the size of an English Red-legged Partridge; the first ten quills of the wing barred on both webs; the tail black with some narrow white bars. Of wide distribution. P. 155.

GREY PARTRIDGES.—One species of the size of a small English Partridge, the other that of an English Red-legged Partridge; the first ten quills of the wing without any bars; the upper plumage regularly cross-barred; the tail largely chestnut. Of wide distribution. P. 169.

RED-LEGGED PARTRIDGES.—About the size of an English Red-legged Partridge; the first ten quills of the wing without bars, but with a portion of the outer web of each feather buff; the tail largely chestnut. The Himalayas and the hills of the N.W. Frontier. P. 178.

ROCK-PARTRIDGES.—Considerably smaller than an English Partridge; tail of 12 feathers; the first ten quills of the wing barred on the outer web only; the tail largely chestnut. The hills of the N.W. of India. P. 184.

PARTRIDGES.—About the size of an English Partridge; tail of 16 feathers; the first ten quills of the wing barred on both webs; the tail largely chestnut. The Himalayas. P. 190.

SNOW-PARTRIDGES.—About the size of a Ptarmigan; the tarsus feathered half-way down to the toes; eyelid completely feathered. The Himalayas. P. 195.

SNOW-COCKS.—About the size of a large fowl; the first quill of the wing reaching almost to the tip of the wing; tail of 20 or more feathers. The Himalayas. P. 200.

BAMBOO-PARTRIDGES.—About the size of an English Red-legged Partridge; the first ten quills of the wing largely chestnut; the sides of the body with large heart-shaped black spots; the upper plumage unbarred; the first quill of the wing falling short of the tip of the tenth. The Indo-Burmese countries. P. 208.

SPUR-FOWL.—About the size of an English Red-legged Partridge; the first ten quills of the wing brown; with a short bushy crest half an inch in length at the utmost; the shafts of the feathers of the rump highly spinous; the first quill of the wing falling short of the tip of the tenth. The Continent of India and Ceylon. P. 213.

BLOOD-PHEASANTS.—About the size of a small fowl; tail of 14 feathers; with a bushy crest of soft feathers about 1½ inch in length. The Himalayas. P. 227.

PEACOCK-PHEASANTS.—About the size of a hen Pheasant; tail of 20 feathers marked with brilliant metallic ocelli in pairs. The Indo-Burmese countries. P. 233.

HORNED PHEASANTS.—About the size of a Guinea-Fowl; tail of 18 or 20 feathers, rounded, the outermost feather reaching beyond the middle of the tail; the first quill of the wing falling short of the tip of the wing by more than one inch; horny part of bill between nostril and tip about half an inch in length. The Himalayas and the Indo-Burmese Hills. P. 239.

MOONAL-PHEASANTS.—About the size of a Guinea-Fowl; tail of 18 or 20 feathers, rounded, the outermost feathers reaching beyond the middle of the tail; the first quill of the wing falling short of the tip of the wing by more than one inch; horny part of bill between nostril and tip more than one inch in length. The Himalayas and Assam. P. 258.

PEA-FOWL.—Of very large size; wing 16 inches or more; tail of 20 feathers; a large portion of the side of the head naked. Of wide distribution. P. 272.

ARGUS-PHEASANTS.—Of large size; tail of 12 feathers; the inner quills of the wing longer than the first ten quills; head and neck for the most part naked. Tenasserim. P. 284.

CHEER-PHEASANTS.—About the size of a large English Pheasant; tail of 18 feathers, long, pointed and much graduated; with a full pointed crest; outermost tail-feather falling far short of the middle of the tail. The Himalayas. P. 292.

TRUE PHEASANTS.—About the size of an English Pheasant; tail of 18 feathers, long, pointed and much graduated; with a very short, blunt crest; outermost tail-feather falling far short of the middle of the tail. The Shan States. P. 298.

BARRED-BACKED PHEASANTS.—About

the size of an English hen-pheasant; tail of 16 feathers; no crest, the feathers of the crown merely lengthened; sides of the head partially naked; no portion of the plumage lanceolate. The Indo-Burmese countries. P. 302.

KOKLASS-PHEASANTS.—About the size of an English Pheasant; tail of 16 feathers; with a full crest more than one inch in length; sides of the head entirely feathered; portions of the plumage lanceolate. The Himalayas. P. 311.

KALIJ- AND SILVER-PHEASANTS.—About the size of an English Pheasant; tail of 16 feathers; portions of the side of the head naked and crimson; with a full pointed soft crest more than one inch in length. The Himalayas and the Indo-Burmese countries. P. 322.

JUNGLE-FOWL.—About the size of a small domestic fowl; tail of 14 feathers; the feathers of the mantle hackled; the two halves of the tail folded together as in the domestic fowl. Of wide distribution. P. 364.

FIREBACK-PHEASANTS.—About the size of a large domestic fowl; tail of 16 feathers; portions of the sides of the head naked and blue: with a full crest of stiff feathers. Tenasserim. P. 378.

THE QUAILS.

The Quails are well-known small game birds, widely distributed over Europe, Africa and Asia, and mostly migratory. Even the species which have a comparatively limited range are restless and move to and fro according to season.

The Quails have a pretty plumage, and most of them are beautifully streaked on the sides of the body as well as on the upper surface. The tail is very short, pointed and composed of 8 to 12 very soft feathers, quite indistinguishable from the feathers which cover them above and below. The wing is pointed, and the first quill reaches almost, if not quite, to the tip of the wing. The sexes differ in plumage, and slightly in size. There is no spur on the leg of either sex.

Three of the Indian Quails may be termed common in some part or other of the Empire. A fourth visits our Eastern frontier in the winter, and will no doubt, now that attention is drawn to it, be found generally distributed over the vast territory known as the Shan States.

The Quails can only be confounded with the Bush-Quails, and this is hardly possible if it is borne in mind that three out of the four Indian Quails have the sides of the body streaked, and that the fourth species, although not streaked, has the outer web of the quills of the wing perfectly unmarked. In the Bush-Quails, on the other hand, the sides of the body are never streaked and the outer web of the first ten quills of the wing is invariably barred.

14. THE GREY QUAIL.

Coturnix coturnix, (LINNÆUS).

Sides of the body streaked.
Outer web of the quills of the wing marked with rufous.

MALE :—Throat dark brown or blackish.

FEMALE :—Throat pale buff and without any lengthened and pointed feathers on the sides of the chin and upper throat.

VERNACULAR NAMES :—*Bhatér*, *Burra Bhatér*, *Gagus Bhatér*, Upper India; *Buttairo*, *Butteyra*, Sind; *Buttree*, Lower Bengal; *Soipol*, Manipur; *Botah Surrai*, Assam; *Lowa*, Ratnagiri; *Búr-ganja*, *Búr-ganji*, *Gúr-ganj*, Poona, Satara, etc.; *Búrli*, Belgaum; *Gogari-yellichi*, Telugu; *Peria-ka-deh*, Tamil; *Sipalé haki*, Canarese.

THE Common or Grey Quail is chiefly a winter visitor to India, being extremely common at that season in the northern half of the peninsula and becoming rarer towards the south. Hitherto it has not been found in Ceylon. This Quail arrives in large numbers from the north and east in September, and leaves again according to locality in March, April or even May. Some few Quails remain and have been found nesting in various parts of India. The most eastern locality from which I have seen a Quail of this species is Cachar, and I now very much doubt if it occurs in Burma, and especially Lower Burma, as was believed to be the case when I wrote the "Birds of British Burmah." Major Wardlaw Ramsay's specimen from Karennee turns out to be the Japanese Quail, and mistakes may have occurred with regard to the other instances of its occurrence in Burma. There are very many sportsmen in Burma now, but I have not heard of any one meeting with the Grey Quail in recent years, even in the northernmost parts of Upper Burma.

This Quail has a very extensive range in Asia, Europe, and Africa.

I am not well acquainted with the habits of the Grey Quail, and I shall quote two notes which give us a good general account of the bird. Regarding its call the late Mr. Seebohm wrote :—"The familiar call of the Quail, which is said to be confined to the male only, is a clear flute-like note, or succession of three notes, which, though not very loud, can nevertheless be heard at a considerable distance. This note may be best represented by the syllables *clik-lik-lik*, the accent being sometimes on the first and sometimes on the second syllable. The female replies by a double note, low and unmusical, which appears to be common to both sexes."

Mr. Hume says:—"Although Quails move in flocks, they never, except immediately after the breeding season, keep in coveys, as do the Bush-Quail. There may be thousands in a single field, but each rises, flies, and drops on his own account; and when Quail are scarce, at any time from November to the end of February, you will as often find a single bird as two, three or more in one place. In March I think they begin pairing. for in that month and April, if birds are scarce, you generally find two, four or six in any patch, not one or three or five.

"They feed chiefly morning and evening, and may, if closely looked for, be at times caught sight of for a few moments bustling about, feeding in short stubbles, or thin low grass, or in amongst clumps of the dwarf jujube bushes. They run about stooping, picking here and there, now stopping to scratch, now, as some sound reaches them, standing straight up with upstretched necks, and again, alarmed, gliding out of sight almost like rats.

"When they are in season, the millets are, I think, their chief food; but they eat all kinds of grain, grass-seeds, small fruits, like those of the *Jharberi*, and all kinds of small insects, especially beetles, bugs, and ants.

"During the middle of the day, particularly if the sun be hot, they rest somewhere in the shade, and are then so unwilling to rise that you may *almost* catch them by the hand, while dogs at times actually *do* pounce on them. But except during the heat of the day, although they are tame birds, and allow a near approach, and although they will, where the ground permits it, run a good deal, they are not usually difficult to flush the first or second time, but after having been twice raised they are very unwilling to fly a third time."

The Grey Quail seems to breed in India during March and April, and the few eggs of this species in the Hume Collection were taken in those months in the Punjab and the North-West Provinces. This Quail is at times monogamous, at others polygamous. The nest is a small hollow in the ground, lined with grass, usually in places where grass and bushes grow together. The female lays from six to fourteen eggs.

The eggs are generally broad ovals, but sometimes pyriform, much pointed, and with little gloss. The ground-colour is yellowish buff, and the whole egg is thickly covered with marks, which on some eggs are dots and specks, and on others blotches of various sizes. These marks are reddish brown in most cases, but occasionally brown or olive-brown. The eggs measure from 1·1 to 1·26 in length, and from ·82 to ·95 in breadth.

In the male bird the upper plumage is a mixture of black, grey and rufous, with long conspicuous yellowish streaks. The first ten quills of the wing are brown, the first margined with rufous, the others notched with rufous on the outer web. The chin and throat are dark brown or blackish, succeeded by a crescentic white band reaching from one side of the head to the other. This white band is bordered below by a chain of dark brown spots reaching from ear to ear; and above on each side by a dark band connected with the throat-patch. The sides of the throat are pure white. The breast is buff, with narrow white streaks. The sides of the body are rich buff with black marks and conspicuous long whitish streaks. The plumage of this widely distributed quail varies a good deal, but the above description represents a fairly average Indian bird.

The female has the upper plumage and the wings similar to the same parts in the male, but she entirely wants the beautiful black and white colouring on the throat and sides of the head so conspicuous in the male. The entire lower plumage is pale buff, the upper breast being thickly spotted with black and narrowly streaked with white. The sides of the body resemble the same parts in the male, and retain in an equal degree the streaked appearance.

Length up to 8½; wing about 4¼; tail about 2; legs flesh-colour; irides brown; bill horn-colour or brown, varying in shade. Weight up to 4½ oz.

In the British Museum there are five

specimens of a Quail from India which resemble the male Grey Quail, but while retaining the black band on the throat have the surrounding parts rufous in a more or less marked degree, thus approximating to the colour of the Cape Quail (*C. capensis*). Similar birds are not uncommon in Europe, and they seem to be the result of the interbreeding of the Grey with the Cape Quail. Some of these birds, on the spring migration from Africa to Europe, no doubt get driven to India.

15. THE JAPANESE QUAIL.

Coturnix japonica, TEMMINCK AND SCHLEGEL.

Sides of the body streaked.

Outer web of the quills of the wing marked with rufous.

MALE :—The whole throat and the sides of the head rufous or brick-red, without any black bands.

FEMALE :—Throat pale buff with the feathers on the sides of the chin and upper throat lengthened and pointed.

VERNACULAR NAME :— ? *Ngôn*, Burmese.

THE Japanese Quail is very distinct from the Grey Quail, and in the British Museum there are two skins of the former which were obtained within the limits of the Empire. One was procured by Pemberton in Bhutan many years ago, and the other by Major Wardlaw Ramsay in Karennee in March 1874. This Quail will no doubt be found along the whole of our northern frontier tracts, east of

Sikhim, and along our eastern frontier down to Northern Tenasserim.

Colonel Prjevalsky remarks of this Quail :—" This bird is easily distinguished from the European one by its voice. We found it in South-East Mongolia, Ordos, Kansu, and about Koko-nor, breeding, sometimes numerously, and at others abundantly ; and from the end of March to the middle of summer the call-note of the males can be heard daily, consisting of some deep, hollow sounds, several times repeated in quick succession. In the Yellow River valley they winter in great numbers, and sometimes stop for the cold season also in South-East Mongolia. In Kansu they occur in the steppes, but avoid the narrow mountain-valleys. We found it common in Ussuri-country, where it principally keeps to the plains and steppes. It arrives there in spring, about the end of March or early in April, and leaves again about September or October ; a few, however, remain here to winter. The spring call-note of the males is to be heard until the middle of August ; and the first young were found by us on the 29th of May."

This species has a wide distribution, being found in Japan, Eastern Asia and

China. It will probably be found to occur commonly in parts of the Shan States in winter.

The male bird resembles the male Grey Quail except about the head. The chin, throat and sides of the head are rufous or brick-red, without a trace of any of the black bands to be found on the head of the male Grey Quail. The sides of the body are more richly coloured.

The female bird resembles the female Grey Quail, but has the lower plumage more richly coloured, with more black spots on the breast. The feathers on the sides of the chin and upper throat are much lengthened and sharply pointed, and this character will always suffice to separate the female Japanese Quail from the female Grey Quail.

Size : same as the Grey Quail.

16. THE BLACK-BREASTED QUAIL.

Coturnix coromandelica, (GMELIN).

Sides of the body streaked.

Outer web of the first ten quills of the wing quite plain and unmarked.

MALE :—**Breast black.**

FEMALE :—**Breast merely spotted with black.**

VERNACULAR NAMES :—It is improbable that natives discriminate this species from the Grey Quail. The following names, being additional to those already given for the latter bird, are quoted from Messrs. Hume and Marshall's work. *China butteyr*, Upper India; *Chânac*, Nepal; *Kade*, Tamil; *Chinna-yellichi*, Telugu; *Ngôn*, Burmese.

THE Black-breasted or Rain Quail is restricted to the Indian Empire and is very widely distributed. I can find no notice of the occurrence of this Quail in Kashmir, Tenasserim or the Shan States, but with these exceptions it appears to have been observed in every part of the Empire from the Punjab to Cape Comorin and from Assam to Pegu. When Colonel Legge wrote the history of the Birds of Ceylon this Quail was not known to inhabit that island, but it has since been observed at Colombo. It ascends the hills, such as the Nilghiris and the lower ranges of the Himalayas, quite up to 6000 feet.

The Black-breasted Quail, although so widely distributed, is only to be found in open country where there is grass and cultivation. It avoids forests. It is to a certain extent migratory, its movements being prompted apparently by a desire to avoid heavy rain and flooded country. Messrs. Hume and Marshall inform us that in the lower ranges of the Himalayas, the Punjab, Sind, Rajputana, Cutch, Kattiawar, the North-West Provinces, Oudh and the northern portions of Bengal, this Quail is mainly a rainy-season visitor. Many birds no doubt remain in the above provinces all the year round, for in the Hume Collection there are several specimens which were procured in the Punjab, for instance, from January to April. In the open parts of Upper Burma, where the rainfall is scanty, very large numbers of this Quail arrive at the beginning of the rains and remain for some months. These birds probably come up from Lower Burma, where the rainfall is heavy. There are, however, large tracts of country in Central and Southern India where this bird is a permanent resident.

This Quail is found singly or in pairs, and is fond of grass-land, fallow fields, embankments, and standing crops which are not too thick nor too high. It rises the first time it is disturbed, but it is difficult to get it to rise a second time. Its pretty double call-note is uttered throughout the day. It is rather tame and confiding, and it may often be seen and heard in compounds and in the vicinity of houses.

In India this Quail breeds in August and September, and in Upper Burma probably earlier, but I have never found the nest and cannot be certain about its time of nesting in Burma. The nest is usually a small hollow in the ground, occasionally lined with grass, but more frequently without any attempt at a lining. As many as nine eggs are sometimes laid in one nest, but the more usual number is six or seven.

The eggs vary from broad oval to pyriform in shape. The shell is not very glossy. The ground-colour varies, being in some yellowish white, in others stone-colour, and a few are of a rusty colour. The marks, which are mostly specks, but sometimes blotches and freckles, are black, olive-brown or reddish brown, and are closely set all over the egg. The eggs vary in length from 1 to 1·21, and in breadth from ·8 to ·89.

The male bird has the upper plumage, wings and tail a mixture of black, brown, grey and rufous, with numerous conspicuous long yellow streaks. The first ten quills of the wing are plain brown on both webs. The crown is blackish mottled with rufous, with a yellow band passing down the middle and a white band on each side over the eye. The chin and throat are narrowly black. A black band passes from each angle of the mouth round the white cheek to the base of the throat. A broad white gorget succeeds this black band and passes in a crescentic form from ear to ear. This white gorget is again succeeded by a similar black one. The sides of the neck are rich russet. The middle of the breast is black, and the sides of this together with the sides of the body are buff streaked with black and with some admixture of white. The belly is pale buff.

The female bird is very similar to the female Grey Quail, but may be distinguished at once by the plain brown colour of the outer web of the first ten quills of the wing.

Length about 7; wing about 3½; tail about 1½; legs flesh-colour; irides brown; bill dusky or bluish-horny. Weight about 3 oz.

17. THE BLUE-BREASTED QUAIL.

Excalfactoria chinensis, (LINNÆUS).

Sides of the body without streaks.

Outer web of the first ten quills of the wing plain, unmarked.

MALE:—Breast and sides of the body blue.

FEMALE:—Breast and sides of the body buff cross-barred with brown.

VERNACULAR NAMES: — *Khair-butai, Kaneli*, Nepal; *Burli*, Marathi; *Ngôn*, Burmese.

THE Blue-breasted Quail is found over a considerable portion of the Indian Empire, but it is nowhere very common except in some of the wetter parts of Bengal and Burma. In many portions of India this species may be considered rare, but materials are wanting to enable me to define its limits. Roughly speaking this Quail does not appear to occur west of a line drawn from Simla to Baroda. East of this line it has been observed in various localities up to the extreme north-east corner of Assam, and southwards to Cape Comorin; and also in Ceylon. From Assam its range stretches away through the Indo-Burmese countries and Burma to the extreme south of Tenasserim. I am not aware that this bird occurs in the Shan States, but it very probably does, for this little Quail is found in China and Siam. To the south it ranges down to Singapore. Although this Quail chiefly affects plains, it is nevertheless found in the Himalayas up to 5000 or 6000 feet.

The Blue-breasted Quail moves about a good deal according to season, avoiding the dry parts of the country, and keeping to districts where there is plenty of moisture. In many parts of India it appears to be found chiefly, if not entirely, in the rainy season. In Lower Burma it arrives in great numbers in May at the commencement of the rains, but where it comes from is not known.

At the nesting season this Quail is observed singly or in pairs, but at other times it is seen in small companies. I have always found it in heavy grass jungle, and on the edges of cultivation where the vegetation was rank and more or less flooded.

June and July are the months in which this Quail nests in India and Burma, but in Ceylon it breeds in March, April and May. The nest is a pad of grass on the ground or in a thick clump of grass. The eggs are usually six in number, but four or five only have been taken from a nest. The eggs are oval, broad at one end and pointed at the other. They have little gloss, and they are olive-brown speckled with a few minute reddish brown spots. They measure from ·95 to 1·04 in length, and from ·7 to ·81 in breadth.

In the male, the upper plumage, wings and tail are a mixture of black, grey and rufous with some conspicuous yellowish streaks, and a pale band down the middle of the crown. The first ten quills of the wing are plain brown. The chin and throat are broadly black bordered by a broad white gorget extending from one angle of the mouth to the other, but interrupted below the ear and behind the cheek by a narrow black line. The white gorget is margined below by a narrow black band. The breast and sides of the body are blue ; the belly bright chestnut.

The female has the upper plumage and the quills of the wing of a similar colour to the same parts in the male. The black and white on the throat and sides of the head are wanting. The chin and throat are pale buff, and the foreneck, breast and sides of the body are buff cross-barred with brown. The belly is pale buff without marks.

Length nearly 6; wing $2\frac{3}{4}$; tail about 1; legs yellow; irides red; bill bluish black. Weight about 2 oz.

THE BUSH-QUAILS.

THE Bush-Quails, of which five species are known, are peculiar to the Indian Empire. They are birds of small size, not smaller than the smallest Quail, but considerably smaller than the Grey Quail. Their plumage is firm and richly coloured, and exhibits those streaks on the upper surface which characterise the Quails. Nevertheless they must be looked upon as small Partridges rather than Quails. The sexes differ in plumage; very greatly in some species. They are, however, of much the same size.

The Bush-Quails may conveniently be divided into two sections. In the first (*Microperdix*) the tail is composed of ten feathers. In the second (*Perdicula*) the tail is composed of twelve feathers and the male birds have a small tubercle or very blunt spur on each leg.

I may here repeat that the Bush-Quails can never be confounded with the Quails if it is remembered that in all the species of the former group the outer web of the quills of the wing is always barred or marked with rufous, and that moreover no Bush-Quail has the sides of the body streaked.

18. THE PAINTED BUSH-QUAIL.

Microperdix erythrorhyncha, (Sykes).

Lower plumage with numerous round or oval black spots.

MALE:—With a white band across the crown, narrower than the black band on the forehead.

FEMALE:—With no white band across the crown or black band on the forehead; lower plumage rufous, the spots on the breast being generally confined to the sides; hardly any tinge of grey on the lower plumage.

VERNACULAR NAMES:—*Kokni-lowa*, ? Hind.; *Kadai*, Tamil.

THE Painted Bush-Quail occurs on the Western Gháts of India from the Palni hills on the south up to about the latitude of Bombay, and it extends eastwards to the hills in Mysore, Belgaum, Sátara and Poona. This species is a constant resident in the parts it frequents.

The late Mr. Davison wrote regarding these birds: ". . . . They always occur in bevies numbering eight to twelve birds.

They of course avoid the inner depths of the jungle, but are found on the outskirts, especially where there is good dense cover, such as the common brake fern; but their favourite resort is rather rocky ground, interspersed with bushes and dense clumps of fern and high grass, especially when such places abut on or are near cultivation, or any road along which cattle, carrying grain, habitually pass. . . . They are tame little birds, and will seldom rise when met with on a road unless hard pressed or suddenly surprised; they content themselves with running on ahead, occasionally stopping to pick up a grain or an insect, until they think they are being too closely followed, when they quickly slip out of sight into the first bit of cover they come to. . . . . Their call is a series of whistling notes, commencing very soft and low, and ending high and rather shrill, the first part of the call being composed of single, the latter of double notes, sounding something like *tu-tu-tu-tu tutu-tutu-tutu*, etc. When a covey has been flushed and scattered, one bird commences after a few minutes calling in a very low tone, another immediately taking it up, then another, and so on.

They then begin cautiously to reunite, uttering all the time their low note of alarm."

Dr. Jerdon remarks:—"It lives in moderately large bevies, which rise all together, but with less whirr than the other Bush-Quails, their plumage generally being softer and not so firm."

The Painted Bush-Quail probably has two or more broods in the year, for Miss Cockburn tells us that in the Nilgiris it breeds in January, February and March, and also in September and October. From ten to fourteen eggs are deposited in the nest, which is merely a shallow hole scratched in the ground under the shelter of some cover. The eggs are oval in shape with little gloss, and of a spotless and very pale buff colour. They measure in length from 1·11 to 1·35, and in breadth from ·87 to ·95.

The male has the forehead, the crown, the point of the chin and the greater portion of the sides of the head black, with a brown patch on the hinder part of the crown. A white band crosses the crown between the eyes and is continued over them to the back of the head; the cheeks and the whole throat are white. The upper plumage is brown with large deep black oval spots, and the visible portions of the closed wings have conspicuous white shaft streaks. The outer web of the quills of the wing is barred with rufous. The lower plumage is chestnut, the feathers of the breast broadly fringed with pinkish grey and each of them with a roundish black spot; each feather on the sides of the body with a large oval black patch and terminally fringed with white.

The female, with the exception of the head, closely resembles the male. The lower plumage, however, is much paler, being merely rufous, not chestnut, and the grey fringes to the feathers of the breast are much narrower and frequently absent. The black spots are generally confined to the sides of the breast, the middle part being spotless. As regards the head all the white and black portions are wanting. The forehead, a very broad band over the eye and ear, the sides of the head and the whole chin and throat are rufous, of much the same shade as the rufous of the lower plumage.

Length nearly 7; wing nearly 3½; tail 1½ to 1¾; legs red; irides brown; bill red. Weight up to 3 oz.

19. BLEWITT'S BUSH-QUAIL.

Microperdix blewitti, HUME.

Lower plumage with numerous round or oval black spots.

MALE :—With a white band across the crown, broader than the black band on the forehead.

FEMALE :—With no white band across the crown or black band on the forehead; lower plumage greyish-rufous, the spots on the breast generally extending across the breast.

VERNACULAR NAME :—*Sirsee-lowa*, Mandla, Balaghat, Chanda.

THE distribution of Blewitt's Bush-Quail is not known with any great accuracy, but this bird may be said to be found over the western half of Chutia Nagpur and the eastern parts of the Central Provinces.

So far as our present knowledge enables us to judge, this Bush-Quail may be said to inhabit the hilly portions of a huge triangle, one corner of which is Sirguja of Chutia Nagpur, another the Bastar State, and the third a point below the Pachmarhi hills. These are roughly the limits as at present known, but there is no doubt that its range will be found to be much wider than above indicated.

Mr. F. R. Blewitt, who was the first to bring this bird to the notice of Mr. Hume, says :—"This Quail is invariably found associated in coveys of from four to a dozen and even more. A bevy will, when suddenly alarmed, rise altogether, but, owing to their softer plumage, with a less noisy whirr than the other Bush-Quails. Indeed, in its habits, this species is identical with the others ; if there is a difference, it is in the call note, which in *M. blewitti* is more soft and melodious."

Mr. R. Thompson informs us that this Bush-Quail affects lands covered with tall grass on the banks of nallas and rivers.

The nest and eggs of this bird have not yet been described.

The male resembles the male Painted Bush-Quail very closely, but differs in having the white band across the crown much broader than the black band on the forehead. The lower plumage is a paler chestnut, and the feathers of the breast are so broadly fringed with pinkish grey that the whole breast presents a greyish appearance. The spots on this part are more numerous. The size is also smaller.

The female differs from the male in the same manner as the female Painted Bush-Quail differs from the male of that species. She resembles the female Painted Bush-Quail very closely indeed, and the two are hardly separable except by actual comparison with each other. The female Blewitt's Bush-Quail has, however, the lower plumage a pale greyish rufous, and not a clear rufous as in the female of the other species, and there are more spots on the breast, these, in most cases, extending across the breast. The size is also smaller.

Length up to 6½; wing 3¼; tail 1½; legs red; irides brown; bill red. Weight about 2¼ oz.

20. THE MANIPUR BUSH-QUAIL.

Microperdix manipurensis, (HUME.)

Lower plumage with cross-shaped black marks.

MALE :—Throat rich maroon.

FEMALE :—Throat smoky grey.

VERNACULAR NAMES :—None known.

MR. HUME is, properly speaking, the discoverer of the Manipur Bush-Quail; but it is fair to say that in the British Museum there is a wretched, but unmistakable, skin of this bird which was procured in Bhutan very many years ago. It is not known by whom it was shot, and we must not, perhaps, place too much reliance on the locality.

Mr. Hume thus graphically describes the discovery of this pretty Bush-Quail :—

"Once, and once only, did I meet with this species, and that was near the bases of the hills in the south-eastern portion of the Manipur Plain.

"There were two coveys—one of six and the other of five—feeding in the very early morning in a tiny patch of ground a few yards square, thickly covered with large tufts of freshly springing elephant grass. This patch had recently been burnt; probably it had been fired by design, but the fire had not spread, and all around for many hundreds of yards stretched a dense unbroken thicket of elephant grass, fifteen feet high, and so thickly set that it was next to impossible to force one's way through it. I did not see the birds myself, as I was a few yards to the right, but two of my people, on whom I could rely, saw them distinctly as they ran into the high grass, and described them to me as small blackish Partridges of an *unknown* kind.

"There were about two square miles of high grass covering very uneven and broken ground, and it seemed hopeless to beat it, as we had no elephants and no dogs. So sending every one away quietly, I ensconced myself in the high grass on the opposite side of the little opening to the place at which the birds had disappeared, and stood patiently waiting for about two hours. When it became too late to hope for their reappearance (this kind of bird rarely feeds in the open after 9 a.m.), I recalled my men and set to work to try and burn the grass, as a good breeze was blowing; but after an hour thus wasted, we had to abandon the attempt. The fire would not spread; the grass was nearly dry—it had lost, I mean, all greenness, and nearly all natural moisture—but it had rained incessantly for the previous three days and nights and was still drizzling, and everything was too sodden to take fire. Naturally I was not going to move until I did get a specimen, so my whole camp, soldiers and sailors (we had a lot of boatmen), camp followers, and all the inhabitants of the village were turned out. First we tried cutting, but it soon became obvious that this would be too long a job. So we set to work to divide off the expanse into a number of irregularly-sized patches, and this the configuration of the ground, with its several ridges, along the crests of which the grass grew comparatively thinly, greatly facilitated. Although we had fully one hundred men working with their heavy hatchet-swords (*dahs*, as the Burmese call them), and working, as only these Easterns can, at trace cutting, it was some hours before we had got the ground into shape, and fully three o'clock before beating commenced. At dusk, by dint of our united endeavours, I had knocked over six, of which we had failed to retrieve one. The first bird had convinced me that the species was new to me, and what still more surprised me was that the villagers one and all denied having ever previously seen the bird. We were one and all exhausted with pushing through and through the thicket, and were so cut and scratched by the grass and bruised with stumbles in the broken ground that we were scarcely able to get back to our huts. But I had been very lucky. I had dropped every bird that rose, some of them very difficult shots. They had risen singly and at long intervals.

"Next day I let every one have a long sleep, a good breakfast and a good smoke, and by 10 a.m. we were again in the grass. By three o'clock I had knocked down five more, of which, however, we failed to find one. After that we saw no more, and I fully believe that these *were* only the two coveys of six and five respectively seen and counted by my people. I have had many hard days' shooting in my life, but never any harder than these two."

I may add that these birds were shot on the 9th and 10th April.

The male has the forehead, a streak over the eye, the cheeks, the chin and the throat rich maroon. The space in front of the eye, a small patch behind the eye, and another patch behind the ear are white. The whole upper plumage and the visible portions of the closed wings and tail are olive-grey, the feathers fringed and barred with black. The front and sides of the neck are olive-grey, each feather with a central black mark. The lower plumage is buff, each feather with a black shaft streak and a transverse band, the two forming a cross. The feathers under the tail are black, barred and spotted with white. The outer web of the quills of the wing is barred with rufous.

In the female the lower plumage is a much paler buff and the maroon colour on the head is wanting, the forehead and cheeks being the same colour as the crown of the head, and the chin and throat being smoky grey.

Length rather more than 7; wing 3¼; tail 2; legs orange; irides orange-brown; bill dusky or horn-colour. Weight up to nearly 3 oz.

21. THE JUNGLE BUSH-QUAIL.

Perdicula asiatica, (LATHAM).

Lower plumage below the throat either cross-barred or perfectly plain without marks of any kind.

Inner web of the first ten quills of the wing quite plain and unmarked.

MALE :—**Lower plumage cross-barred.**

FEMALE :—**Lower plumage entirely plain rufous without marks of any kind; but throat rich chestnut, as in male.**

VERNACULAR NAMES:—*Lowa*, Hind.; *Gorza*, ? Hindi; *Juhar*, Manbhum; *Auriconnai*, Sonthali; *Girza-pitta*, Telugu; *Karilowga*, Canarese.

THE Jungle Bush-Quail occurs in suitable localities from the outer ranges of the Himalayas in Kashmir down to Ceylon, and from the eastern borders of Sind to about the longitude of Calcutta. It may occur much farther east, for in the British Museum there are three skins probably obtained by Griffiths in some part of Assam.

Throughout the above area, the ordinary

resorts of the Jungle Bush-Quail, as remarked by Messrs. Hume and Marshall, are " moderately thick forests and jungles, hills, ravines and broken ground, not too deficient in cover, and rich cultivation, if not in too damp and undrained situations, from near the sea-level to an elevation of four to five thousand feet." There is little to say regarding the general habits of these birds. They keep in coveys and are very tame, and are frequently found in compounds, and in the vicinity of houses.

This bird breeds from September to February, but the majority of the eggs in the Hume Collection were taken in September. The nest, consisting of a little grass and some roots, is built in a hollow of the soil under a bush or tuft of grass. The eggs are from four to seven in number, regular ovals, with little gloss, white to very pale buff, and spotless. They measure from ·96 to 1·1 in length, and from ·79 to ·9 in breadth.

The male has the crown brown or reddish brown mottled with black at the sides. The upper plumage is buff, barred and vermiculated with black, many of the feathers with pale narrow shaft streaks. The closed wings are coarsely barred and blotched with black, and many of the feathers have broad pale buff or yellowish shaft streaks. The outer web of the quills of the wing is barred with rufous. The forehead and a band over the eye are chestnut with a creamy white band above. The ears are brown. There is a whitish streak under the eye, and between these streaks the whole space including the throat is rich chestnut. The breast, belly and sides of the body are barred with black and white. The thighs and feathers under the tail are rufous buff.

The female differs from the male only in the colour of the lower plumage. The throat is the same rich chestnut as in the male, but the remaining lower plumage, instead of being barred, is uniformly rufous. The conspicuous buff or yellowish streaks on the upper plumage of the male are not so strongly developed in the female and are almost absent on the back and rump.

Length up to about 7; wing about 3¼; tail about 1½; legs red; irides brown bill dusky with a reddish tinge. Weight up to nearly 3 oz.

22. THE ROCK BUSH-QUAIL.

Perdicula argoondah, (SYKES).

Lower plumage below the throat either cross-barred or perfectly plain, without marks of any kind.

Inner web of the first ten quills of the wing marked with rufous like the outer.

MALE :—Lower plumage cross-barred.

FEMALE :—Lower plumage entirely plain, without marks of any kind; throat whitish.

VERNACULAR NAMES :—*Lowa*, Hind. and Marathi; *Lawunka*, Telugu; *Sinkadeh*, Tamil; *Kemp-lowga*, Canarese.

THE Rock Bush-Quail has a somewhat less wide distribution than the Jungle Bush-Quail. It does not occur so far north, having only been found in the southern and eastern parts of the Punjab. It was observed in Sind by the late Lieut. H. E. Barnes. Thence this bird extends eastwards to as far at least as Allahabad, but it does not appear to cross the Ganges river at any point. Southwards this species extends down to Madras and Coimbatore, and in fact, according to Messrs. Hume and Marshall, to the extreme south of the peninsula.

The Rock Bush-Quail selects those localities which are avoided by the Jungle Bush-Quail, and according to the testimony of many observers, the two species are not found together.

Messrs. Hume and Marshall observe regarding this species :—" It avoids mountains, which it never ascends, forests and thick jungle, and eschews well-watered and richly wooded or cultivated tracts ; it loves dry, open, sandy or even rocky plains or low hillocks, sparsely studded with thin, thorny bushes ; elevation is not of so much consequence to it as the openness and semi-waste character of the place."

This Bush-Quail and the Jungle Bush-Quail do not appear to differ in general habits.

The Rock Bush-Quail breeds during many months of the year, and the eggs have been taken in all months except May, June, and July ; but March and September appear to be the two months in which most nests are to be found. The nest is a loose pad of grass in a hollow on the ground, often under a bush. The eggs are usually six or seven. They are, as a rule, spotless white, but some few have a very faint tinge of buff or clay-colour. They are oval in shape and fairly glossy. They measure from ·95 to 1·12 in length, and from ·78 to ·91 in breadth.

The male has the forehead, the anterior part of the crown, the sides of the head and the chin and throat rufous. The space in front of the eye, and a short stripe running from the eye over the ear, are dull white. The remaining upper plumage, closed wings and tail, are greyish. brown, closely and coarsely cross-barred with pale rufous buff. Both webs of all the quills of the wing are mottled and barred with rufous. Occasionally there are a few very small black blotches on the quills next the body. The whole lower plumage from the throat downwards is barred with black and very pale rufous buff, or yellowish white, the black bars disappearing on the lower part of the belly. Some of the feathers of the upper plumage have pale shafts, but there are no streaks, as in the Jungle Bush-Quail.

The female has nearly the whole plumage a warm pinkish brown, the wings, rump and tail freckled with rufous buff, and the throat whitish. The space in front of the eye, and an indistinct streak from the eye backwards, are whitish.

Length up to about 7; wing $3\frac{1}{4}$; tail about $1\frac{1}{2}$; legs red; irides reddish brown; bill dusky. Weight up to 3 oz.

THE MOUNTAIN-QUAILS.

THE only representative of this group is a small bird which has hitherto only been found in certain parts of the Himalayas. It is intermediate in size between the Quails and the Rock-Partridge. It has the soft plumage of the Quails, but differs from them notably in having an ample rounded tail. It also differs from them in the shape of the wing, the first quill of which falls short of the tip of the wing by more than half an inch; or the tip of the tenth quill, when the wing is closed or only slightly opened, falls about half-way between the tips of the first and second quills. From the Bush-Quails, the Mountain-Quail may at once be separated by its greatly superior size. From all the Partridges it may be distinguished by having only ten tail-feathers.

I have been thus particular in treating of this bird, because it is a very peculiar bird, and one apparently of great rarity, and I am anxious that, if any sportsman should meet with it, he may recognise it at once and not look upon it as a mere common Quail, which I have no doubt has frequently happened. It is perhaps only a rare bird because it has been overlooked, or, rising like a Quail, has not engaged the attention of the sportsman.

In the Mountain-Quail the sexes differ considerably in plumage but not in size. The leg is without a spur.

Mr. Ogilvie Grant has placed this bird amongst the Pheasants, and he may be right in doing so. I cannot, however, quite reconcile myself to this arrangement, and I prefer to place this curious bird between the Quails and the Partridges.

23. THE MOUNTAIN-QUAIL.

Ophrysia superciliosa, (GRAY).

Total length not less than 9 inches.
Tail of ten feathers.
First quill of the wing falling short of the tip of the wing by more than half an inch; the tip of the tenth quill falling between the tips of the first and second.

MALE :—General colour olive-brown.

FEMALE :—General colour cinnamon-brown.

VERNACULAR NAMES :—None known.

THE Mountain-Quail is one of the rarest of Indian game birds, and the few specimens that we know of were procured near Mussooree and Naini Tal many years ago.

This Quail-like bird has been shot at the above places in November, December and June, and I am therefore inclined to consider it a permanent resident in those parts of the Himalayas.

Mr. Hume is, however, of opinion that this species is a winter visitor to India.

He thus summarises all that is known about it :—" We gather that these birds are winter migrants, some occasionally remaining till the beginning of summer. They keep habitually in coveys of six to ten, though single pairs may be met with. They frequent grass jungle and brushwood, cling pertinaciously to cover, and are scarcely to be flushed without dogs, fly slowly and heavily and soon drop again, Quail-like, into cover. They feed on grass, seeds (and probably insects and berries), and when feeding, call to each other with a low, short, Quail-like note, their alarm note and call when separated being a shrill whistle. Their range in the Himalayas in winter is probably from five to eight thousand feet."

This bird appears to have all the skulking habits of the Manipur Bush-Quail, and if so, it is no wonder that it has not been oftener observed.

The male has the sides of the head to a considerable distance above the eye, black. A spot in front of the eye, another behind, and a large patch beneath the ear are white. The forehead and a broad band passing over the eye to the neck are also white. Above this white band there is another black one of about the same length and breadth, and the crown between these black bands is brown streaked with black. The chin and throat are black. The whole upper plumage, the visible portions of the closed wings and the whole lower plumage are olive-brown, every feather margined with black on the sides, but not at the tip. The tail and the first ten quills of the wing are unmarked olive-brown. The feathers under the tail are deep black broadly tipped with white.

Younger males have the quills of the wing freckled and want the white patch under the ear.

The female has the forehead and a band over the eye greyish pink, with another black, but shorter, band above. The crown of the head is cinnamon-brown with a few black streaks. There is a white spot in front of the eye and another behind, with a small black patch under the front white spot. The sides of the head and the whole throat are greyish pink. The whole upper plumage with the wings and tail are cinnamon-brown, the feathers of the hindneck with large black streaks, those of the mantle and wings with a triangular black patch chiefly on the inner web, and those of the back and rump with a large black triangular patch extending equally over both webs. The tail is irregularly barred and mottled with black. The first ten quills of the wing are mottled with buff. The whole lower plumage is cinnamon-brown with an oval black spot or streak on each feather.

Length from 9 to 10; wing about 3½; tail about 3; legs and bill red.

THE WOOD-PARTRIDGES.

The two species of Wood-Partridges found within the limits of the Empire occur only in the thick forests of the extreme south of Tenasserim. They possess the remarkable character of having only a rudimentary hind-claw; the claw presenting the appearance of having been cut off close to the toe. Both species are of very beautiful plumage.

The Crested Wood-Partridge (*Rollulus*) has 12 tail-feathers. Both sexes have a bunch of black hairs, more than an inch in length, springing from the forehead, and the male in addition has a bushy crest of disintegrated feathers nearly two inches in length. The leg is without a spur. The two sexes differ in plumage.

The Ferruginous Wood-Partridge (*Caloperdix*) has 14 tail-feathers. Both sexes are alike in plumage and have no crest. The male has one or two spurs on each leg; the female is without a spur.

24. THE CRESTED WOOD-PARTRIDGE.

Rollulus roulroul, (SCOPOLI).

Tail of 12 feathers.
A tuft of long hairs springing from the forehead.

MALE :—Crested.
FEMALE :—Not crested.

VERNACULAR NAMES :—None known.

THE Crested Wood-Partridge occurs in the extreme south of Tenasserim, where it appears to be abundant.

This species extends to Siam and down the Malay peninsula to Singapore and to the islands of Sumatra, Java and Borneo.

The late Mr. Davison, who had good opportunities for observing this very pretty Partridge, wrote :—

"This species is always found in small parties of six or eight or more, males and females, keeping to the dense forest and never venturing into the open, living on berries, seeds, tender shoots and leaves and insects of various sorts. It does not scratch about nearly so much as the *Arboricolas*, and is much quicker and more lively in its movements, much like a Quail, running hither and thither. They rise well before a dog, but it is hard to flush them without. Their note is a soft, mellow, pleasant whistle, which is chiefly heard in the morning, but which they also utter when calling to each other, after they have been separated. Like that of *A. rufogularis*, their note is very easily imitated, and they will answer the call readily."

I cannot find any account of the nidification of this Partridge, but in the British Museum there is an egg of this species which was sent from Labuan in Borneo. It is an oval glossy egg of a very pale buff colour. It measures 1·52 by 1·21. In the same collection there are two eggs which were laid by a bird of this species in the Zoological Gardens of London. These eggs are a rather warm buff tinged with olive; one is spotless and measures 1·5 by 1·16, the other has a few specks of brown scattered over the shell and is of about the same size as the other.

The male Crested Wood-Partridge has the crest maroon and a band immediately in front of the crest white. With these exceptions the whole head and neck are black. The upper plumage is glossy bluish green and the tail black. The greater part of the visible portion of the closed wing is dark brown, more or less freckled with rufous on the outer webs of the feathers. The outer webs of the first ten quills of the wing are rufous freckled with brown; the inner webs plain brown. The whole lower plumage is bluish black.

In the female the whole head and the neck are grey, with a band of dull black on the hindneck. The remaining plumage is green, tinged with slaty on the belly, and the tail is slaty brown. The whole wing is chestnut more or less freckled with brown.

Length about 11; wing about 5½; tail about 2½; legs bright red; irides brown; bill black with some red at the base; naked parts of the head red. Weight up to 10 oz.

25. THE FERRUGINOUS WOOD-PARTRIDGE.

Caloperdix oculea, (TEMMINCK).

Tail of 14 feathers.
Greater part of plumage chestnut.

Sexes alike.

VERNACULAR NAMES:—None known.

THE Ferruginous Wood-Partridge occurs in the extreme south of Tenasserim about Maliwun and Bankasoon. It extends down to Malacca.

Absolutely nothing is known of the habits of this beautiful Partridge, and it is doubtful if any European has ever seen it in its native forests. It appears, however, to be easily trapped.

The late Mr. W. Davison, who allowed few opportunities to escape him of observing the habits of birds, was baffled by this Partridge, and he failed either to shoot or see it himself in the forests. The only specimens he got in Tenasserim he trapped. He found that one bird he examined had eaten insects and seeds.

The male and female of this species are alike, and have the whole head, neck, breast and belly chestnut, darkest on the crown and palest on the throat. There is a short and rather indistinct black band over the ear. The mantle is black, each feather with a white line parallel to the edge of the feather and another one within it. The rump and tail-coverts are black, each feather with a triangular or arrowhead-shaped chestnut mark. The tail is black, the middle pair of feather with chestnut freckles. The closed wing is olive-brown, each feather with a round terminal black spot. The first ten quills of the wing are plain brown tipped with rufous. The sides of the breast and of the belly are black, barred with white or buff, and with some large black spots near the legs.

Length nearly 11; wing about 5½; tail about 2½; legs dull green; irides deep brown; bill black. The weight of a female bird weighed by Mr. Davison was 8 oz.

THE HILL-PARTRIDGES.

The Hill-Partridges, of which there are seven species found within our limits, are birds of about the size of the English Partridge. Most of them are brightly coloured, and all of them are characterised by having the neck or throat, or both, spotted in such a manner as to form a feature which cannot be overlooked. The feathers of the throat are moreover rather meagre, and the red skin of that part is in life, or in freshly killed birds. generally very conspicuous. The tail of these birds, composed of 14 feathers, is of the same general colour as the upper plumage, namely, olive-brown mottled with black. The quills of the wing are uniformly coloured, and the first falls short of the tip of the wing by about an inch.

The sexes are alike in plumage and size, except in one species, where the differences of plumage are very considerable. All the Hill-Partridges have long toes and claws but no spur. They frequent the thickest jungle, fly for very short distances, and afford little sport. They are confined to the Himalayas and to the countries east of the Bay of Bengal.

The Hill-Partridges may be divided into two sections by the formation of certain bones over the eye, and in a more practical manner by their plumage. The first section (*Arboricola*) contains six species, all of which have white spots on the sides of the body and large black oval patches on the inner feathers of the wing. The sides of the body of many of these birds are also adorned with beautiful chestnut marks. The second section (*Tropicoperdix*) contains only one species. This is without white spots on the sides of the body or black spots on the wings, but it has a huge patch of soft downy white feathers on the side of the body, which is visible, however, only when the wing is lifted up and the ordinary feathers pushed aside.

26. THE COMMON HILL-PARTRIDGE.

Arboricola torqueola, (VALENCIENNES).

Sides of the body marked with white and chestnut.
Breast grey or rusty olive-brown.
Feathers of the back with broad black bars and margins.

MALE :—Throat black, followed by a white gorget.

FEMALE :—Throat rufous streaked with black, followed by a chestnut gorget.

VERNACULAR NAMES:—*Roli*, *Ramchukru*, Chamba; *Peura*, *Ban-tetra*, Kumaon and Garhwal; *Kaindal*, Kangra; *Kohempho*, Lepcha; *Kangkom*, Bhutia.

THE Common Hill-Partridge is distributed over the outer ranges of the Himalayas from Sikhim to the Chamba State, and is found at all elevations from 5000 to 14,000 feet; but it appears to be commoner below 8000 feet than above that altitude. It also occurs in the Naga Hills.

This Partridge inhabits watercourses and ravines as is the habit of all the members of this group. There is not much to be said about this species in particular, but Colonel Tickell, in his usual charming manner, has strung together a few remarks about it which I shall reproduce. He says : " I have met with them in ones and twos, sometimes in a small covey of five or six. They are not wild, trusting apparently to the dense covert they frequent for safety; and I have sometimes sat down on the hill side and, after remaining quiet for a few minutes, heard their little feet pattering and scratching over the fallen leaves close to me. Now and then one would emit a low soft whistle; and in places under the bushes, where no grass grew, one or two might be seen picking and pecking as they glided along under the leaves. In these bare spots they would sit or lie on their sides, scratching and throwing dust over themselves. A very little movement would send them all into covert as suddenly as if they had disappeared by magic; and by striding hastily into the bush where they had been last seen, it was possible sometimes to flush them and get one, or a hasty right and left shot; but a more difficult one cannot be imagined, for they fly with the sudden startling flush and flurry of the Partridge, with great speed, and so low over the underwood as barely to afford aim enough to be reckoned even a snap shot."

There are four eggs in the British Museum said to have been found in Sikhim, and which I think have been correctly assigned to the present species. They are broad ovals, pointed at one end and very glossy. They are very pale greyish white with some minute pale brown specks. In length they vary from 1·56 to 1·6, and in breadth from 1·22 to 1·27.

The male bird has the whole crown and the ears deep chestnut. A narrow white line borders the crown on each side. The space round the eye and in front is black. The chin, throat, part of the sides of the head, and the whole neck are black streaked with white. In some specimens the throat is almost wholly black. A white gorget divides the black of the neck from the grey of the breast. The belly is pure white and the sides of the body are of a purer and deeper grey than the breast, and each feather has a large oval white spot and broad lateral chestnut margins. The upper plumage, wings and tail are olive-brown, each feather of the back and rump broadly margined and barred with black, the feathers of the latter part with triangular black marks. Many of the wing-coverts have a large diagonal oval black drop with a chestnut tip or lateral margins, and some few feathers again are frequently streaked with white.

The female differs from the male chiefly in the colour of the head and neck. The crown is olive-brown streaked with blackish, and a broad streak over the eye is pale rufous streaked with black. The chin, throat, part of the sides of the head and the whole neck are rufous streaked with black, and these parts are separated from the rusty olive-brown breast by a chestnut gorget. The other parts of the plumage resemble the same parts in the male but are duller, and the belly is hardly of such a pure white.

The female of this species closely resembles the female of the next species, but may be recognised at once by the bars and fringes on the feathers of the back being broad and well-defined. In the next species there are no bars on these feathers and the fringes are very faint.

Length about 11; wing about 6; tail about 2½; legs fleshy grey; irides brown; bill blackish. Weight up to 13½ oz.

27. BLYTH'S HILL-PARTRIDGE.

Arboricola rufigularis, Blyth.

Sides of the body marked with white and chestnut.
Breast grey.
Feathers of the back obsoletely fringed, not barred.
Throat chestnut, spotted with black.

Sexes alike.

Vernacular Names :—*Peura*, Kumaon ; *Kohumbut-pho*, Lepcha ; *Lakom*, Bhutia. *Pokhu*, Daphla Hills.

Blyth's Hill-Partridge occurs in the lower ranges of the Himalayas from Kumaon to about the 94th degree of east longitude, where the Daphla Hills are situated. It again occurs many hundreds of miles south, on Muleyit, and probably other high hills, in Tenasserim. In the intermediate country between Assam and Tenasserim, the next species only has been observed.

This species ranges from the base of the hills up to 6000 feet. There is little to say regarding the habits of this Partridge; they seem to be quite similar to those of the other Hill-Partridges.

Mr. Hume tells us that Mr. Mandelli sent him an egg of this Partridge. It was taken from a nest which contained four fresh eggs on the 4th July at Pattabong, below Darjiling. This egg is described as being a broad oval in shape, pointed towards the small end; in colour a sullied white with a few very minute grey specks dotted about on it; and the shell rather fine and smooth, but with very little perceptible gloss. It measured 1·5 by 1·2.

In this bird the crown of the head is brown spotted with black, and a broad band over the eye is grey speckled with black. The throat, the sides of the head and the sides of the neck, (almost meeting behind) are chestnut with round black spots. The upper plumage, the wings and tail are olive-brown; the feathers of the back with faint, indistinct, darker margins (sometimes almost absent); the rump and tail with small black spots and triangular marks; the wing-coverts pale olive-brown with large oval black spots and chestnut tips. The spotted throat is followed by a plain chestnut patch, and again by a black band. This black is reduced in size, or sometimes quite absent, in specimens from Tenasserim. The breast is deep grey; the belly greyish white; and the sides of the body deep grey, each feather with a white spot, and the lateral margins broadly chestnut. The first ten quills of the wing are brown, mottled with rufous at the tip.

Length about 10½; wing about 5; tail about 2; legs pale red; irides brown; bill black. Weight up to 12 oz.

28. THE ARRAKAN HILL-PARTRIDGE.

Arboricola intermedia, BLYTH.

Sides of the body marked with white and chestnut.
Breast grey.
Feathers of the back obsoletely fringed, not barred.
Throat black.

Sexes alike.

VERNACULAR NAME:—*Toung-hka*, Burmese.

THE Arrakan Hill-Partridge occurs in various parts of the Arrakan hill range, and I observed it on the eastern slopes of this range in the latitude of Prome. I also procured this Partridge near Bhamo, and quite lately Mr. F. Atlay sent me a specimen from the Ruby-Mines. Colonel Godwin-Austen observed it in the North Cachar and the Naga Hills, and Mr. Hume in Manipur.

The range of this species and the

preceding intercept each other very curiously; and presently, when we have more specimens to compare from various localities, I think the two species may have to be united.

Speaking of this Partridge, Mr. Hume says:—"This species was very common in the Eastern Manipur Hills at elevations of 4000 feet and upwards. In the Western hills I did not see it.

"It frequented chiefly the thinner jungle, on the slopes of the hills, which has grown up where in past years the primeval forest had been felled for cultivation. They run terribly, and without dogs it is only by the merest chance that one can get a shot at them. As a rule they never fly; only when, caught between two or three beaters, there is no other means of escape, do they make up their minds to show themselves, and then they rise with a rush with comparatively little noise, and sweep away smoothly and very rapidly down hill."

Again he writes:—"I obtained a nest of this species containing six eggs on the 10th May at an elevation of 6000 feet near Machi in the Eastern Manipur Hills. The nest was a pretty large depression at the base of a tuft of grass scantily lined with dry bents. It was in the midst of grass about two feet high which was growing amongst thin scrub-jungle. When the nest was first found the bird rose from the eggs within a yard of us, and was snared at the nest about two hours later. The eggs are broad ovals conspicuously pointed towards the small end; the shell is extremely fine, compact and close, and has a fine gloss, at any rate a fair amount of gloss. The colour is pure spotless white. They measure from 1·46 to 1·52 in length and from 1·13 to 1·19 in breadth."

This Partridge resembles Blyth's Hill-Partridge very closely. The present species, however, has a black throat, followed by a chestnut band, to which succeeds the grey of the breast. The black band below the chestnut of the foreneck, always present in Himalayan examples of Blyth's Hill-Partridge, is absent in the Arrakan Hill-Partridge.

The present Partridge resembles the preceding species in size.

29. THE RED-BREASTED HILL-PARTRIDGE.

Arboricola mandellii, (HUME).

Sides of the body marked with white and chestnut.
Breast chestnut.
Throat chestnut followed by a white patch and a black band.

Sexes alike.

VERNACULAR NAMES :—None known.

THE Red-breasted Hill-Partridge inhabits the low hills of Bhutan and the country skirting their base, and Mr. Hume has once received this species from the northern part of the Goalpara district in Assam.

I am not aware that any European has ever met with this beautiful species, and I can find nothing on record about its habits.

This Partridge has the crown deep chestnut. A broad grey band runs from each eye to the back of the neck, the two bands meeting and surrounding the chestnut crown. The sides of the head and the sides and back of the neck are chestnut spotted with black. The upper plumage, wings and tail are dark olive-brown, the feathers indistinctly margined darker, and those of the wings and tail marked with triangular black spots, many of the wing-coverts with a large oval black spot and a chestnut tip. The chin and throat are chestnut followed by a white patch and next by a black band. The breast is deep chestnut and the belly smoky grey. The sides of the body are grey, with triangular white spots, and dashed with chestnut.

Length about 11; wing about 5; tail about 2; the colour of the legs, irides and bill in life is not known.

30. THE WHITE-CHEEKED HILL-PARTRIDGE.

Arboricola atrigularis, BLYTH.

Sides of the body with small oval white spots, but with no trace of chestnut. Cheeks white; throat black.

Sexes alike.

VERNACULAR NAMES:—*Peura*, Sylhet; *Duboi*, Assam; *San-batai*, Chittagong.

THE White-cheeked Hill-Partridge occurs from the Bhramaputra river southwards to Chittagong on the west and to the Kachin Hills, in the neighbourhood of Bhamo, on the east. In Assam it appears to be restricted to the south bank of the Bhramaputra from Sadiya to the Garo Hills. It has been met with in Cachar, Sylhet, Tipperah, Manipur and Chittagong, and this Partridge will probably be met with over a great part of Upper Burma as far as the southern limit of the wet zone.

Very little is known of this species. Mr. Cripps, as quoted by Messrs. Hume and Marshall, says:—"Though greatly affecting dense forest, these birds are also partial to bamboo jungle. . . . Their call, which is often heard, especially towards dusk, is a rolling whistle, *whew*, *whew*, repeated many times, and winding up with a sharper and more quickly uttered *whew*. The sound is very easily imitated, and the birds are easily enticed to approach one by the imitation, and this is the way in which natives usually secure them."

Mr. Cripps also gives us the following note regarding the nesting of this Partridge:—"On the 15th April, 1876, I secured a nest of this bird in Sylhet containing two perfectly fresh eggs. Again on the 18th May of that year I secured four hard-set eggs from a nest. Both nests were placed at the foot of large trees which stood at the tops of *teelahs* or hillocks; a few scanty bushes grew about under the trees, but the whole place looked very dark and gloomy. The nests were mere linings of leaves and twigs which had been placed in slight depressions, apparently hollowed out by the birds. The *teelahs* were about a hundred and fifty or two hundred feet in height."

The eggs were broad ovals, pointed towards the small end. They were probably pure white when fresh, but at the time they were taken they had acquired some stains. In length the eggs measure from 1·33 to 1·43, and in breadth from 1·1 to 1·13.

The crown of the head in this species is olive-brown with black spots or streaks, and the eye is enclosed by two black bands which join and run down the sides of the neck. The upper plumage is olive-brown, irregularly but closely cross-barred throughout with black. The closed wings are pale olive-brown, many of the feathers with an oval black spot and a chestnut tip. The first ten quills of the wing are plain brown. The cheeks are white and the throat and part of the sides of the neck are deep black. The remaining portion of the sides of the neck is rufous streaked with black. The foreneck is black, the feathers margined at the sides with white. The breast is deep grey with some black spots on the upper part, and the belly is pale ashy. The sides of the body are deep grey, each feather with a small oval white drop generally followed by some black.

Length about 10½; wing about 5½; tail about 2¼; legs and bare skin of the head red; irides brown; bill black. Weight up to 11 oz.

31. THE BROWN-BREASTED HILL-PARTRIDGE.

Arboricola brunneipectus, TICKELL.

Sides of the body with large round white spots, each spot nearly surrounded by black, but with no trace of chestnut.

Throat and foreneck buff, the latter spotted with black.

Sexes alike.

VERNACULAR NAME :—*Toung-hka*, Burmese.

THE Brown-breasted Hill-Partridge has not been very frequently met with. It seems to be confined to the valley of the Sittang river and to the hills of Tenasserim as far south as Tavoy. I procured this Partridge on the eastern slopes of the Pegu Hills not far south of the old frontier line between British and Native Burma. Major Wardlaw Ramsay observed it on the opposite side of the valley on his way to Karennee, and several observers have recorded it from various parts of Tenasserim.

This Partridge is common in densely wooded and hilly localities where the vegetation is evergreen and thick. I observed it on the Pegu Hills almost entirely at the bottom of ravines and streams.

The crown and the hind part of the head are olive-brown thickly spotted with black, the spots tending to coalesce at the back of the head. A very broad buff band passes from the forehead over each eye, the two bands meeting behind the head. A broad black band encircles each eye and runs down the side of the neck. The throat is plain buff, and the foreneck is buff spotted with black, the spots merging into a black band across the lower foreneck. The upper plumage is olive-brown banded with black and the tail is variegated with olive-brown and black. The visible portion of the closed wings is very pale clear olive-brown, most of the feathers with a large oval black spot and a chestnut tip. The first ten quills of the wing are brown with some rufous mottlings at the tips. The breast is warm olive-brown. The remainder of the lower plumage is tawny brown, the sides of the body marked with large round spots, each of which is more or less surrounded by black.

Length about 11; wing nearly 5½; tail 2½; legs red; irides brown; bill black; visible parts of the skin of the head and throat red. Weight up to 13 oz.

32. THE GREEN-LEGGED HILL-PARTRIDGE.

Arboricola chloropus, TICKELL.

Sides of the body without any white spots, but with a large patch of downy white feathers partially concealed by the ordinary feathers.
Throat white spotted with black.

Sexes alike.

VERNACULAR NAME :—*Toung-hka*, Burmese.

THE Green-legged Hill-Partridge is found generally throughout Northern and Central Tenasserim from Papun on the north to Tavoy on the south. It also occurs on the eastern slopes of the Pegu Hills in the latitude of Toungoo, where I observed it to be fairly common. It probably extends down these hills to Rangoon. Outside of our limits it has been procured in Cochin China only.

The late Colonel Tickell, the discoverer of this species, thus wrote about it (he refers to Tenasserim): "It appears tolerably numerous, but, as far as my observations go, is entirely confined to the forests on the banks of the Zummee river. Unlike its known congeners, it avoids mountains and inhabits low, though not humid, jungles, where the ground merely undulates or rises into hillocks. Like the rest of its tribe it is difficult to flush, and runs with great rapidity, jumping adroitly over obstacles, and diving into impenetrable thickets for security. Early in the mornings these birds come out on the pathway, scratching about amongst the elephant's dung and turning over the dead leaves for insects. They do not appear to have any crow or call, though during the pairing season this may not be the case. The Karens did not even know the bird; but this is no proof of its rarity, for these people pay no attention to the living products of their forests."

My experience of these birds differs from that of Colonel Tickell, inasmuch as in the Pegu Hills I met with this Partridge only in the steepest ravines and valleys, and mostly in dense evergreen vegetation.

The late Mr. Davison, however, wrote:—"This species is most abundant in thin tree jungle, but is also found in thick forest. It is usually met with in pairs, but sometimes in small parties, gliding about on the ground amongst the dense brushwood, and scratching about among the dead leaves, hunting for insects and seeds. Its note is a low, soft, double whistle, which is chiefly heard in the morning and evening. Without dogs they are very hard to procure, as they will not rise, but run only a short distance, and then squat close under some cover."

In this species the crown and the hindneck are rich brown; the forehead and a broad band over the eye, extending to beyond the back of the head, white streaked with black; the chin almost pure white; the throat and cheeks white spotted with black; and the sides of the neck and the foreneck chestnut spotted with black. The whole upper plumage and tail are a rich olive-brown tinged with rufous; every part cross-barred in a wavy irregular manner with black, and the wings mottled and blotched with black, reddish brown and olive-brown. The first ten quills of the wing are brown slightly mottled at the tip. The lower part of the front of the neck is brown. The upper part of the breast, its sides and the sides of the body are ferruginous, irregularly barred with black, and the middle of the breast is plain ferruginous or pale chestnut. The belly is whitish. On the side of the body, under the wing, there is a large patch of white downy feathers which is partially hidden and requires to be looked for.

Length about 11½; wing about 6; tail about 3; legs greenish; irides dark brown; bill greenish. Weight up to 12 oz.

THE FRANCOLINS.

The Francolins are brightly-coloured birds, three species of which are represented within our limits and have a wide distribution. They are easily recognised by the rufous bars which are to be found on both webs of the quills of the wing, and by the black tail, more or less barred with white. The tail is short and rounded, composed of 14 feathers. The male has usually one spur on each leg, sometimes two. The female is not furnished with a spur. The sexes differ in coloration, but not very greatly.

The species of Francolin are very numerous, and more than forty are enumerated in the "Catalogue." In that work, however, the Grey Partridges are united with the Francolins. These two groups are, no doubt, generally similar in structure, but they differ so greatly in general style of plumage that I prefer to keep them separate. In fact, I have found it impossible to find any characters of plumage common to both the Francolins and the Grey Partridges of India. By keeping them apart, however, the two groups are easily defined.

33. THE BLACK FRANCOLIN.

Francolinus francolinus, (LINNÆUS).

With the hindneck chestnut.

MALE:—**The chestnut on the hindneck produced round the neck as a collar.**

FEMALE:—**The chestnut on the hindneck confined to that part.**

VERNACULAR NAMES:—*Kala titur*, Hind.; *Kais-titur*, female, Nepal; *Tetra*, Garhwal; *Vrembi*, Manipur.

THE Black Francolin or Black Partridge is widely distributed through the northern part of the Empire, but is entirely absent from large tracts of country which are too dry for its habits, such as portions of Rajputana.

The series of skins of this Partridge in the Hume Collection do not show the limits of its distribution at all satisfactorily. It appears, however, to be spread over the whole of northern India, its southern limit being, according to Messrs. Hume and Marshall, a line drawn from the Gulf of Cutch up to Gwalior, and thence down to the Chilka Lake on the eastern coast.

North of this imaginary and approximate line, the Black Francolin occurs from Sind to Bengal, ascending the Himalayas in summer up to 7000 feet. It also extends through Assam and the country south of the Bhramaputra down to Manipur. Outside our limits it is found as far west as Palestine and Cyprus.

"It is," says Mr. Hume, "in the valleys of our larger rivers, where population is not very dense, and where high grass and tamarisk (*Jhao*) jungle are interspersed with cultivation, that the Black Partridge will be met with in greatest abundance. . . .

"But though they prefer such localities, and the water and the low-lying lands do seem a great attraction to them, numbers may be found in widely different localities, as, for instance, in the scrub bush jungle about the bases of the Mewât hills (the northern horn, if I may use the word, of the Arvalis), in the Gurgaon district, where every place is as dry as an old bone.

"Again you may find them in fields of *all* kinds, irrigated or not—young mustard fields especially, if the environment be suitable, being favourite resorts.

"But whether in hills or plains, you need never hope to find more than a straggler or two, unless there be in the immediate neighbourhood thin forest or jungle of some kind, be it brush, tamarisk, stunted date, grass, reed or rush.

"Wherever you may be, you need never remain a second day in ignorance of the proximity of Black Partridges. By the earliest dawn, their clear, far-reaching, cheerful call, syllablised in a score of ways by natives and Europeans, rings out through the fresh morning air; and as soon as it is light enough to look about, you will, by silently following the sound, have little difficulty in discovering some, at any rate, of the vocalists, each posted on some convenient little eminence—a clay fence, an old post, a rock projecting from a hill-side, an ant-hill—any raised place, in fact, except a bush or tree, on one of which *I myself* never yet saw this bird perch."

It seems certain, however, that this Francolin does occasionally perch or rest on a bough of a tree.

The Black Francolin breeds in June and July, and also in May according to Dr. Jerdon. The eggs, varying in number from six to ten, are laid on a few pieces of grass and leaves in a hollow of the ground in thick jungle. The eggs are very broad at one end and taper to a blunt point at the other. They are fairly glossy and quite unspotted, varying in colour from a slightly greenish to a brownish buff. They vary immensely in size, and measure from 1·36 to 1·8 in length and from 1·18 to 1·38 in breadth.

The male has the crown reddish brown streaked with black. The throat and the sides of the head are deep black with a patch of white over the ears and a small white spot in front of the eye. There is a broad chestnut collar round the neck. The upper back is black with very distinct white spots. The lower back, rump and middle tail-feathers are black with narrow regular white cross-bars. The other tail-feathers are black with white bars at their bases. The visible portions of the closed wings are dark brown, each feather very broadly edged with rufous. The quills of the wing are brown, very broadly and coarsely barred on both webs with rufous. The breast and the upper belly are deep black. The lower belly and the sides of the body are black with large white spots. The thighs and the space between are chestnut barred with white, and the feathers under the tail are a richer chestnut and without bars.

In the female the chin and throat are whitish and the sides of the head buff speckled with black; the ears brown. The crown is pale buff streaked with black. The back of the neck is chestnut. The whole back and the visible portions of the closed wings are dark brown, each feather broadly edged with buff. The rump and the middle tail-feathers are dark brown mottled and cross-barred with buff. The other tail-feathers are black with narrow white bars at their bases. The quills of the wing are brown barred with rufous on both webs, as in the male. The whole lower plumage from the throat downwards is pale buff with coarse irregular interrupted black bars on every part. The feathers under the tail are deep chestnut.

The size of these birds varies very much and the males are larger than the females. Of males the length is about 14, the wing rather more than 6, the tail about 3½ or 4; legs red; irides brown; bill brown to black. The weight varies excessively, and Messrs. Hume and Marshall give it as from 8 to 20 oz.

34. THE PAINTED FRANCOLIN.

Francolinus pictus, (JARDINE AND SELBY).

No chestnut on the hindneck.
Sides of the head of one uniform colour without bands or spots.

MALE:—Throat spotted; white bars on the rump very distinct and straight.

FEMALE:—Throat unspotted; white bars on the rump indistinct and wavy.

VERNACULAR NAMES: — *Kala titur*, Marathi; *Titar*, Poona, Satara, etc.; *Kakera Kodi*, Telugu.

THE Painted Francolin, or Painted Partridge, occupies that portion of the peninsula of India in which the preceding species is absent. Its northern limit is therefore very much the same line that defines the southern limit of the Black Francolin, and south of this line it is found in suitable localities down to Ceylon. The Painted Francolin appears to be absent or rare in certain tracts such as Mysore and portions of the Malabar coast. Messrs. Hume and Marshall give the distribution of this Francolin in considerable detail, but I do not quote their remarks, for since they wrote this bird has been observed in Ceylon, and it may occur in other localities from which they excluded it.

The habits of this Francolin do not appear to differ in any important respect from those of the Black Francolin, but it seems to affect dry localities in preference to damp ones. I shall quote what Dr. Jerdon says about this bird:— "Like its northern congener, it delights in grassy plains and fields, but more affects open, dry and raised plains, with scattered bushes, than the low-lying, damper meadows that the Black delights in. It is always when the grain is ripe, as well as at other times not unfrequently, to be found in wheatfields and other cultivated lands, and occasionally in open and grassy glades in the midst of thin forest jungle. It chiefly occurs in pairs, now and then several, not far from each other. Early in the morning, the cock-bird may be heard uttering his peculiar guttural call or broken crow, *Chee-kee-kerray—Chee-kee-kerray*, which can be heard a long way off, though by no means loud, and is answered on all sides. On approaching the spot whence the sound proceeds, if carefully looked for he may be seen seated on a stump of a tree, or a thick bush, or an ant-hill or other elevated spot; but when he finds himself discovered, he slinks down and runs off in a way that puzzles dogs much."

The nesting season of the Painted Francolin is from July to September. The eggs are very similar in colour to those of the Black Partridge, and vary in size from 1·3 to 1·48 in length, and from 1·1 to 1·25 in breadth.

The male has the forehead and the sides of the head chestnut and the crown of the head black with narrow chestnut margins to the feathers. The mantle is black with white spots. The back, the rump and the tail-coverts are black distinctly cross-barred with white. The tail is black with some narrow white cross-bars at the base. The visible portions of the closed wings are black, the smaller coverts with large round buff spots, the larger with broad buff margins. The quills of the wing are black with large coarse rufous bars on both webs. The chin and throat are pale buff with a few small black spots. The foreneck is pale buff streaked with black, and the remainder of the lower plumage is buffish white, rather darker on the sides of the body, each feather with a black shaft streak and two or three black cross-bars, the general effect of which is to make the lower plumage appear to be covered with large roundish white or buffy white spots. The feathers under the tail are rich chestnut.

The female differs from the male chiefly in having the white spots and bars on the upper plumage smaller and less distinct, and in having no black spots on the throat.

Length about 13; wing rather less than 6; tail about 3; legs pale reddish; irides brown; bill brown or black. Weight up to nearly 13 oz.

35. THE CHINESE FRANCOLIN.

Francolinus chinensis, (OSBECK).

No chestnut on the hindneck.
Sides of the head with dark bands, one over the eye, and one below the white of the face.

MALE :—Lower plumage spotted.
FEMALE :—Lower plumage barred.

VERNACULAR NAME :—*Hka*, Burmese.

THE Chinese Francolin abounds over a great portion of the Province of Burma and the Shan States. Its western limit is probably the Irrawaddy river, for I do not remember to have seen or heard it west of that river, except near its banks —as at Thayetmyo, for instance. The southern limit of the distribution of this Francolin is well defined in the plains, being coincident with the line which separates the dry and wet zones of Burma, and is a line drawn approximately from Prome to a point about midway between Yemethin and Pyinmana, and produced to the adjacent hills. Along this range and its ramifications this species extends south to Tenasserim, Major Wardlaw Ramsay having met with it in Karennee, and Colonel Bingham in the Thoungyin valley.

To the east this Francolin occurs all over the Shan States, extending to Southern China and Siam. The northern limits of this bird are not known, but I met with it at the Ruby mines, and it probably occurs much farther north.

The Chinese Francolin is found in dry open forest and scrub jungle, and it generally keeps to hilly or undulating country in preference to the low flat plains. It is found in nearly every part where the rainfall is moderate, and it avoids thick, humid forests. It frequents the smaller tracts of cultivation where these are surrounded by high grass and brushwood intermingled with low trees.

Although this bird is found singly or in pairs, and never in coveys, very many birds congregate together in favourite localities. The cocks perch freely on the larger boughs of trees as well as on posts, stumps, ant-hills and other objects which raise them a few feet above the ground. Their loud and pleasant call is heard pretty well all the year round, but more especially on fresh, cold-weather mornings. When crowing they are not very shy; but they are difficult to detect, and on being closely approached they drop very quietly to the ground and disappear instantly.

This Francolin breeds in May or June, but Mr. D. K. MacDonald took a large number of eggs for me near Meiktila in September, some of which are now in the British Museum. It probably breeds in many months of the year, according to locality. The nest is merely a depression in the ground, in which from four to six, or perhaps more, eggs are laid. They are sharp-pointed ovals in shape, with little gloss, and are a pale buff, sometimes with a greenish tinge. They measure about 1·5 by 1·2.

In the male a broad black band passes from the bill over the eye to the neck, and above this a broad chestnut band. The crown, between these chestnut bands, is black, each feather edged with chestnut. Below the black band, the side of the head is broadly white succeeded below by a long black moustachial streak reaching to the neck. The chin and throat are white. The neck all round, the mantle and the breast are black with double sets of round white spots. The back, the rump and the tail-coverts are cross-barred with black and white. A patch on the closed wing, next the body, is rich chestnut; the remainder of the wing blackish with pale rufous round spots. The quills of the wing are dark brown barred on both webs with rufous. The tail is black, more or less finely barred with white at the base. The belly and sides of the body are black with double sets of large roundish pale rufous spots. The feathers under the tail are rich chestnut.

The female has the head very similar to that of the male, but the white parts are tinged with buff and the dark bands are dark brown instead of black. The mantle is the only part of the plumage with round white spots. The chestnut patch on the wing of the male is, in the female, merely indicated by some rufous on the edges of the feathers. The wings and the whole lower plumage are barred with black and buff, the former preponderating on the wings and the latter on the lower plumage. The back and rump are blackish mottled with buff and barred narrowly with white and pale buff. The tail resembles that of the male.

Length about 13; wing about 5½; tail about 3; legs orange; irides reddish hazel; bill blackish. Weight up to 14 oz.

THE GREY PARTRIDGES.

The Grey Partridges are probably very closely allied to the Francolins, and as previously remarked Mr. Ogilvie Grant places them all in one genus. It seems to me, however, that the Indian Grey Partridges possess certain characteristics of coloration which render it desirable that they should be kept separate from the Francolins.

In the Grey Partridges the sexes are alike in coloration, but the males are much larger than the females. The tail is short and rounded and composed of fourteen feathers. The male has one or sometimes two spurs on each leg; the female rarely one.

These Partridges may be recognised by the first ten quills of the wing being plain or unmarked, except that in one species the outer web of some of the inner quills, say the seventh to the tenth, has some small and insignificant mottlings at the base; by the tail being more or less rufous or chestnut; and by the upper plumage being cross-barred.

36. THE GREY PARTRIDGE.

Ortygornis pondicerianus, (Gmelin).

Lower plumage cross-barred.

Sexes alike.

Vernacular Names :—*Titur*, *Ram-titur*, *Gora-titur*, *Safed-titur*, Hind., general; *Khyr*, Bengali; *Gowjul-huki*, Canarese; *Kondari*, Tamil; *Kuwunzu*, Telugu.

The range of the Grey Partridge extends over the whole of India as far east as the longitude of Calcutta; and it is also found in Ceylon. It does not, however, appear to be common north of the Ganges and Gogra rivers. This Partridge does not ascend the Himalayas to above a level of 1500 feet, but occurs sparingly in the Nilgiris up to an altitude of 5000 feet.

According to Messrs. Hume and Marshall, the Grey Partridge does not occur in the South Konkan nor on the Malabar Coast, and it is absent from the forest regions of the Central Provinces and their

Feudatory States, and of the Tributary Mahâls.

Westwards of India, this bird extends as far as Persia.

Dr. Jerdon has the following note on the habits of the Grey Partridge:—

"It frequents alike bush-jungle and cultivated lands, being often found in gardens and compounds, and very generally near villages, concealing itself in hedgerows and thickets. It associates in coveys of varied numbers, from five to fifteen, is often very difficult to flush, running for a great distance and with amazing speed, and taking refuge in thick bushes and hedges, whence it is driven with difficulty. When flushed it rises with a loud whirr, flies very strongly, but does not take long flights. It frequently perches on low trees and shrubs and on the branches of thick *Euphorbia* hedges. Its call is a peculiar loud shrill cry, and has, not inaptly, been compared to the word *Pateela-pateela-pateela* quickly repeated, but preceded by a single note uttered two or three times, each time with a higher intonation, till it gets, as it were, the keynote of its call."

The Grey Partridge appears to nest twice in the year, once from February to June, and again from September to November. The eggs are usually laid in a shallow depression, well concealed under a bush, or in a large tuft of high grass, and more or less neatly and thickly lined with grass. The eggs vary in number from six to nine, and are spotless, pale buff. They are oval, a good deal pointed towards one end, and glossy. They vary in length from 1·2 to 1·42 in length and from ·95 to 1·12 in breadth.

In this bird the forehead is chestnut and the crown umber-brown with darker shaft-streaks. A band over the eye and the cheeks is pale rufous. The chin and throat are buff surrounded by an interrupted black band or series of spots. The sides of the neck are delicately barred with black and white. The whole upper plumage, the visible parts of the closed wings, the tail-coverts and the middle tail-feathers are umber-brown, dashed with chestnut, especially on the back and wings, and everywhere barred with pale buff. The first ten quills of the wing are brown with a little grey mottling towards the base of the outer webs. The tail-feathers, except the middle pair, are chestnut, becoming black towards the extremity and tipped with buff. The whole lower plumage, from the throat downwards, is pale buff, shaded with rufous, closely and delicately but irregularly barred with black.

The male is larger than the female. Length of the former about 13; wing nearly 6; tail about 3½; length of the latter nearly 12; wing about 5½; tail about 3¼; legs bright red; irides dark brown; bill blackish. Weight up to 12 oz.

37. THE SWAMP-PARTRIDGE.

Ortygornis gularis, (TEMMINCK).

Lower plumage streaked and presenting a scaly appearance, each feather being white, margined with a double border of black and brown.

Sexes alike.

VERNACULAR NAMES :—*Kyah*, *Kair*, *Kaijah*, Bengal; *Bun-teetur*, *Jungliteetur*, Hind.; *Koi*, *Koera*, Assam; *Bhil-titar*, Cachar.

THE Swamp-Partridge or Kyah is found in suitable localities throughout the tract of country lying between the Ganges and the base of the Himalayas, from the eastern portion of Rohilkund to the northern portion of the Sandarbans. Thence through Eastern Bengal and Assam up to Sadiya and southwards to Cachar and Tipperah. This bird is said to be occasionally found south of the Ganges.

I turn to Dr. Jerdon for some account of the habits of this Partridge. He says :—

"The favourite grounds for this Partridge are thick beds of reeds and long grass along the banks of rivers, jheels and watercourses; and especially in those swampy patches of reeds where the creeping Rose-bushes form thickets impenetrable to aught but an Elephant. If cultivated land be near, so much the better, for this Partridge loves to feed on open patches of Mustard, Dhal and other pulses, and indeed during the cold weather may frequently be found in the fields at all hours of the day. Occasionally it resorts to dry grassy plains with scattered bushes, but much more generally grassy churs near water. During the rains and when some of its usual haunts are flooded, it betakes itself to the fields, hedgerows and bush jungle, and at this time affords good sport even to the sportsman on foot; and in some localities when flooded, the Kyah may be seen flying from tree to tree.

"This Partridge is generally, except when breeding, met with in somewhat scattered coveys, which rise three or four at a time with a cackling scream; they fly strong and straight with outstretched neck, seldom going to any distance, but dropping into some thick covert, and thence often dislodged with difficulty; for it runs much even among thick reeds. It very generally, however, especially in swampy thickets, perches on the high reeds and generally roosts there.

"The call of the Kyah is quite similar in character to that of the Grey Partridge, though in a somewhat different tone, and not uttered so hurriedly, and the preliminary chuck is exactly that of its congener. It is one of the earliest birds astir, crowing at daylight, as well as frequently during the day."

The nest of the Swamp-Partridge has not often been found. Dr. Jerdon states that this bird breeds from March to May. Mr. H. J. Rainey found a nest of this species in April in Lower Bengal. This nest appears to have been neatly made of grass in a depression in the ground, and contained five eggs. Mr. Hume describes these eggs as being of a pale *café-au-lait* colour with some pale speckles about the larger end, and in one or two of the eggs some additional speckles on other portions of the shell. They measured from 1·44 to 1·5 in length and from 1·16 to 1·23 in breadth.

This Partridge has the crown brown; a broad band over the eye, another below the eye and the space in front of the eye pale buff. The chin, throat, cheeks and the sides of the neck are chestnut. The whole upper plumage, the closed wings and the middle tail-feathers are brown, closely and rather regularly cross-barred with pale buff. The remaining tail-feathers are chestnut, tipped paler. The first ten quills of the wing are rufous terminated with brown. The lower plumage from the throat downwards is white, each feather with a double margin, the inner portion black and the outer brown. The feathers under the tail are pale rufous.

The male is larger than the female. Length of the former about 14; wing about 7; tail about 4; length of the latter about 13; wing 6½; tail about 3½; legs red; irides brown; bill black or dark brown. Weight about 18 oz.

THE RED-LEGGED PARTRIDGES.

THE sole representative of the Red-legged Partridges in India is allied to the English bird, *C. rufa*, but differs chiefly in having the chest or upper breast unmarked.

In these Partridges the sexes are similar in plumage, but the males are rather larger than the females. The male is furnished with one blunt spur on each leg. The tail is rounded and composed of 14 feathers. The sides of the body are beautifully banded with a combination of grey, black, buff and chestnut; the plumage is characterised by an absence of bars and streaks; and the first ten quills of the wing are partially buff on the outer web.

The Chukor or Indian Red-legged Partridge is replaced in a considerable part of Europe by a close ally, *C. saxatilis*, which differs principally in having the ear-coverts black mixed with buff, instead of having them wholly chestnut as in the Indian bird.

38. THE CHUKOR-PARTRIDGE.

Caccabis chukar, (GRAY.)

First ten quills of the wing unbarred, but with a portion of the outer web of each, near the tip, buff.

Upper plumage without a trace of bars.

All but the middle tail-feathers chestnut.

Sexes alike.

VERNACULAR NAMES :—*Chukor*, Hind.; *Kau-Kau*, Kashmir; *Chukru*, Chamba.

THIS fine Partridge is found throughout the Himalayas from Sikhim to Kashmir and Hazara, and throughout the ranges of hills which divide India from Afghanistan and Baluchistan. It is also found in the Salt Range in the Punjab. Throughout its range this Partridge occurs at all altitudes from the sea-level up to about 16,000 feet.

The Chukor-Partridge has a very extensive range outside of India, being found in South-eastern Europe on the one hand, and in China on the other.

The Chukor is very abundant in the

Himalayas, and its habits may be gathered from the following brief accounts, taken from various sources.

"Mountaineer" as quoted by Dr. Jerdon says :—"In autumn and winter they keep in loose scattered flocks, very numerous, sometimes to the number of forty or fifty or even a hundred. In summer, though not entirely separated, they are seldom in large flocks, and a single pair is often met with. They are partial to dry stony spots, never go into forest, and in the lower hills seem to prefer the grassy hill-sides to the cultivated fields."

Dr. Scully observes :—"The Chukor is common on certain parts of the hills round the valley of Nepal, at elevations of from five to six thousand feet from March to October. It frequents rounded grassy hills, where the small nullahs are fringed with bushes, and where there is no forest; in such localities, especially near patches of cultivation and on bits of stony ground, flocks of Chukor are sure to be found. About the end of October the birds descend the hills and assemble on the confines of the warmer valleys for the winter, where they can feed in the rice fields which have been reaped, in fields of growing corn, etc."

Although Dr. Scully does not seem to have observed this bird in Nepal at a higher elevation than 6000 feet, it is commonly found in other parts of the Himalayas at much greater altitudes. Thus the late Dr. Stoliczka tells us that the Chukor is common all over the North-west Himalayas and West Tibet, where it ascends to 14,000 feet. Above this altitude it is probably rare.

Mr. Hume thus describes the cry of this Partridge:—"The Chukor is a very noisy bird, repeating constantly, in a sharp, clear tone, that may be heard for a mile or more through the pure mountain air, his own well-applied trivial name. Like other game birds, they call most in the mornings and evenings; but even when undisturbed, they may be heard calling to each other at all hours of the day; and very soon after a covey has been dispersed, each individual member may be heard proclaiming his own, and anxiously inquiring after all his fellows', whereabouts. The tone varies. First he says, 'I'm here, I'm here;' then he asks 'Who's dead? who's dead?' and when he is informed of the untimely decease of his pet brother and favourite sister, or perhaps his eldest son and heir, he responds, 'Oh lor! Oh lor!' in quite a mournful tone."

The Chukor breeds in April, May and June, according to elevation, and its nest has been found in July as high up as 16,000 feet. The eggs, which vary in number from eight to twelve, are deposited on the ground, generally in a slight hollow which is lined with a little grass or a few leaves. The eggs are oval, pointed a good deal towards the small end, and they are moderately glossy. The ground-colour varies from creamy-white to pale buff. Some eggs are thickly spotted and speckled with purplish, reddish and yellowish brown, whilst others are often blotched with purplish pink. They vary in length from 1·55 to 1·9, and in breadth from 1·15 to 1·3.

The upper plumage is bluish ashy with a decided rufous tinge on the mantle and crown of the head. The first ten quills of the wing are dark brown, each with a conspicuous buff patch on the outer web near the tip. The middle tail-feathers are bluish ashy, the others chestnut. A whitish streak runs over the eye. The point of the chin and a small patch at the angle of the mouth are black. The remainder of the chin, the cheeks and the throat are pale buff. The forehead and a broad band through the eyes, running down the neck and encircling the throat, are black. The ear-coverts are chestnut. The breast is grey tinged with rufous at the sides, and the remainder of the lower plumage is bright buff, the sides of the body being beautifully banded with grey, black and buff, and each feather tipped with chestnut.

Length about 14½; wing about 6½; tail nearly 4; legs red; irides brown or orange; bill deep red. Weight up to 27 oz.

THE ROCK-PARTRIDGES.

The Rock-Partridges, of which there is only one representative in India, are small birds of a sandy colour, assimilating well with the rocky ground and sandy wastes they frequent. The sexes differ in colour, and the male bird has the sides of the body prettily banded with black and chestnut. The tail is short, slightly rounded, and composed of only 12 feathers. There is no spur or knob on the leg of either the male or the female. The bars on the outer webs only of the quills of the wing, and the chestnut tail, are characters which will serve to distinguish this from all other Indian Partridges.

A second species of this group, *A. heyi*, inhabits a considerable tract of country east and west of the Red Sea, extending on one side to the Persian Gulf. The male of this species differs from the male of the Seesee-Partridge in wanting the black forehead and the black streak over the eye. The females of the two species are quite alike.

39. THE SEESEE-PARTRIDGE.

Ammoperdix bonhami, (FRASER).

First ten quills, except the first, barred with rufous on the outer web only.

All but the middle tail-feathers chestnut.

MALE :—Sides of the body banded with black and chestnut.

FEMALE :—Sides of the body narrowly barred with black.

VERNACULAR NAME : *Seesee*, Punjab and Sind.

THE Seesee-Partridge occurs in the northern part of the Punjab and in Hazara, and its southern limit east of the Indus river appears to be approximately a line drawn east and west from the Indus to the Chenab river through Shahpur. It is found throughout the hills of the Punjab and Sind, west of the Indus river, and extends to Afghanistan, Baluchistan, and through Persia, to the Euphrates river. It has also been observed at Aden.

This pretty Partridge is an inhabitant of barren and rocky ground up to a level of about 7000 feet. Mr. Hume thus refers to its habits:—"They are eminently birds of bare broken ground; on grassy slopes they may indeed be found, for they feed much on grass seeds, but they eschew utterly forests or thickly wooded tracts, and even where there is much scrub about they are less common,—the barer and more desolate the ravines and gorges, the more thoroughly do they seem at home.

"They are active, bustling little birds, scratching about a great deal in the earth, dusting themselves freely in the sand, basking in the sun, resting in little hollows they have worked out for themselves, and generally reproducing in many ways the manners of the domestic fowl.

"Their call, continually heard in the spring, is a clear double note, 'Soo-see, Soo-see,' and they have also, whilst feeding and when surprised, a whistled chirp, uttered very softly when at their ease, but sounding more harshly when they are alarmed."

Dr. Blanford observed these Partridges in Persia, and makes the following remarks:—"They keep much to low hills and stony ravines about the bases of hill ranges. During the spring and summer they are found in pairs or singly; in the winter they are occasionally to be met with in small coveys, but by no means so frequently as *Caccabis*; nor do they collect, as far as my observations extend, in equal numbers. They may usually be seen walking quietly up stony hillsides, not running so swiftly as most Partridges, nor caring much for concealment; indeed, when they wish to hide, it is sufficient for them to remain still, for their colour so closely resembles that of the sand and stones around that they are most difficult to detect. When they rise, it is much like a Quail, with a rather quick flight, and a whistle uttered as they start."

The Seesee appears to breed in April, May and June, and the eggs are laid in a depression scratched by the birds near or under a bush or a rock or sometimes in the midst of loose stones. The depression is lined with a little dry grass and sometimes a feather or two. The eggs vary from eight to twelve in number. They are oval in shape and have little gloss. Their colour varies from almost pure white to a pale cream colour, and they are spotless. In size they vary from 1·3 to 1·5 in length and from 1 to 1·1 in breadth.

The male has the forehead and a streak over the eye black. The space in front of the eye and a streak behind the eye are white, margined below by a very narrow black line. The crown of the head, the ears, cheeks, chin and throat are grey. There is a patch of bright buff behind each ear. The sides of the neck are barred with grey and buffish white. The upper plumage with the wing-coverts and tail are sandy buff, brighter on the mantle and with small triangular black spots on the rump. The quills of the wing are brown, much marked with light buff on the outer web. The middle tail-feathers are mottled rufous and dusky; the others are chestnut. The lower plumage from the throat downwards is a beautiful pinkish buff, the lower part of the belly, the thighs and the feathers under the tail being very pale, and almost white. The feathers on the sides of the body are broadly margined with black and chestnut.

The female has the whole plumage throughout irregularly cross-barred with wavy lines of grey and pale rufous; the rump marked with a few short black streaks; the quills of the wing next the body blotched with black; and the sides of the body barred narrowly with black. The quills of the wing and the tail are coloured as in the male.

Length about 10; wing about 5; tail about 2½; legs yellow; irides yellow, orange or brown; bill orange. Weight up to 8 oz.

THE PARTRIDGES.

THE birds of this group may be considered the typical Partridges, and amongst them the common English Partridge is a prominent member.

The Tibetan Partridge, the sole Indian species of this group, is of about the same size as the English Partridge, and has many characters in common with it, such as the barred wing, the chestnut tail and the bands on the sides of the body. It has, however, one pair of tail-feathers less. The sexes are similar in plumage and size, and there is no spur on the leg of either the male or the female.

It is not quite satisfactory to retain the English and the Tibetan Partridge in the same genus, inasmuch as these two birds differ in the number of their tail-feathers; but I wish to disturb the nomenclature of the "Catalogue" as little as possible, and I accordingly follow Mr. Ogilvie Grant in placing the Tibetan Partridge in the genus *Perdix.*

40. THE TIBETAN PARTRIDGE.

Perdix hodgsoniæ, (HODGSON).

First ten quills of the wing barred on both webs with rufous.
Tail largely chestnut.

Sexes alike.

VERNACULAR NAMES :—None known.

THE true home of the Tibetan Partridge is Tibet, and this bird rarely enters British territory. Messrs. Hume and Marshall thus give its distribution in the Himalayas: "The Tibetan Partridge only just crosses from Chinese Tibet into our territories. The first specimen, indeed, ever shot by an European was killed by Mr. Wilson in the autumn of 1841, when shooting Chukor in the fields near Sukhi, a village high up in the valley of the Bhagirathi and near the snowy range in which, a few marches eastwards, Gangotri is situated. But it has never since been met with on the southern side of the first snowy range, though year after year Mr. Wilson hunted for it in this same locality.

Subsequently it has been repeatedly met with on several of the passes leading from the valley of the Indus to the head of the Pangong lake, and about the lake itself; it has been shot near the Buddhist monastery at Hanle, and near the foot of the Lanak Pass; and it has been obtained at the extreme north of both Kumaun and Garhwal."

In the British Museum there are skins of this Partridge obtained in Ladak; at Nobra, north of Ladak; and at Darjiling.

Mr. Hume thus refers to the one occasion on which he met with these Partridges: "The birds were in pairs, apparently far from wild, but absolutely invisible when amongst the bare stones and rocks, and I should certainly have passed them unnoticed but for their vociferous calls, which seemed to me so like those of our English bird that I took some trouble in searching the neighbourhood with the dogs. I put up several pairs, and shot three or four. I noticed that when flushed they only flew a short distance, and that their whirring rise and flight were precisely that of the European bird, and very different to that of the Chukor. The entire aspect of the hill-side where these birds were found was dreary and desolate to a degree—no grass, no bushes, only here and there, fed by the melting snow above, little patches and streaks of mossy herbage, on which I suppose the birds must have been feeding."

This beautiful Partridge is probably not found below an altitude of 12,000 feet.

The nest of this species was discovered by Major Barnes on the 12th July with ten fresh eggs in the pass leading from the Pangong valley to the Indus valley at an elevation of about 19,000 feet. He states that to the best of his recollection the nest was a mere indentation in the ground, in grass amongst low dwarf bushes. One of these eggs is now in the British Museum. There is also another egg in the same collection presented by Colonel Biddulph, who procured it in Ladak. These two eggs are very similar, but one is rather more pointed than the other. In shape they are oval, with a good deal of gloss. Both eggs are clay-coloured, without marks of any kind. They measure respectively 1·77 by 1·2 and 1·64 by 1·18.

The male and female of this species are quite alike. The forehead and a broad streak over the eye are white; the crown of the head is rufous with white streaks.

There is a broad chestnut collar nearly surrounding the neck, not quite complete in front. The back and shoulders are buff, barred with chestnut and black; the closed wings are a mixture of buff, black and chestnut with paler buff stripes; the quills are barred on both webs with rufous. The rump and the middle three pairs of tail-feathers are buff, irregularly barred with chestnut, the other tail-feathers are chestnut tipped with whitish. The throat and upper neck are white. The lower plumage is pale buff barred with black, except the sides of the body which are barred with chestnut. There is a large black patch on the cheek.

The male is rather larger than the female. Length 11 to 12; wing rather more than 6; tail rather more than 3½; legs and bill dull green; naked skin round the eye red. According to Mr. Hodgson the weight of this Partridge is 1 lb.

THE SNOW-PARTRIDGES.

The Snow-Partridge, which bears a general resemblance to the Ptarmigan in summer plumage, differs from all the Indian Gallinaceous birds in having the tarsus feathered half way down to the toes ; the eyelid is also completely covered with plumelets, a feature of unique occurrence among Indian game birds.

In the Snow-Partridge the sexes are similar in plumage and in size. The tail is composed of 14 feathers. The male is furnished with one strong but blunt spur. The wing is very pointed, and the first quill reaches almost to the tip of the wing.

41. THE SNOW-PARTRIDGE.

Lerwa lerwa, (HODGSON).

Tarsus feathered half-way down to the toes.

Eyelid completely feathered.

Sexes alike.

VERNACULAR NAMES :—*Larwa*, Nepal; *Jungooria*, Kumaon; *Quoir-moonal*, *Koor-moonal*, Garhwal; *Golabi*, *Bhair*, *Ter-tetur*, Busahir and other Hill-States; *Barf-ka-tetur*, Kulu; *Biju*, Chamba.

THE Snow-Partridge occurs on the higher ranges of the Himalayas from Sikhim to Kashmir. It is probable that this species occurs also in Bhutan, but we have no certain knowledge of this. It likewise extends to Moupin and Western China.

The following remarks by Mr. Hume give us a good idea of the habits of this Partridge :—" Although in severe winters, and after heavy falls of snow, *crowds* of Snow-Partridges may be met with at from

7000 to 9000 feet elevation, Indian sportsmen, as a rule, never meet with them, except in their summer haunts, at elevations of from 10,000 to even 14,000 feet; and they are so invariably seen in grounds frequented by Tahr and Burrel, that, though one of the very best of Indian birds for the table, they are but rarely shot.

"It is generally close up under the snow amidst grey crags and hoary precipices, or on tiny plots of stunted herbage, girt round by huge boulders and rugged blocks of rock, amidst which the snow still lies thickly, and at an average elevation of 11,000 feet (at any rate from May to September) that this Ptarmigan-like Partridge is to be found.

"It is very locally distributed; you may march for a couple of days, continually passing through or near the most likely spots, and never see or hear a bird; and again you may see a hundred in a day's march, or one party, or at most two parties, daily for a week. . . .

"In the spring they are usually in pairs, but it is not uncommon to find a dozen such in a couple of hours' walk. Later they are in coveys of from seven to thirty, old and young, and by the end of

September many of the latter are almost full grown.

"Their flight is rapid and strong, much like that of a Grouse; and if met with in comparatively unfrequented spots, they often afford superb sport."

The cry of this Partridge is described by several observers as a loud whistle uttered both when at rest and on the wing.

The nest of the Snow-Partridge does not appear ever to have been found. Mr. Frederic Wilson informs us that "it breeds on the high ridges jutting from the snow at elevations of from 12,000 to 15,000 feet, where the ground is tolerably broken and roughish, neither very rocky nor on what we call 'slopes.' . . . The chicks have been first observed about the 20th of June." Mr. Wilson was, however, unsuccessful in finding the eggs.

The sexes are quite alike. The throat, sides of the head, and the whole upper plumage, with the visible portions of the closed wings and tail, are cross-barred with black and buffy white; and the plumage is washed in places, especially on the wings, with chestnut. The first ten quills of the wing are black; and the others next to them are broadly tipped with white. The whole lower plumage from the throat downwards is rich chestnut, splashed with white. The lower part of the belly and the thighs are cross-barred with brown and white. The feathers under the tail are chestnut tipped with white.

Length about 15; wing about 7½; tail about 4½; legs and bill red; irides brown. Weight up to 22 oz.

THE SNOW-COCKS.

THE Snow-Cocks are magnificent birds, the size of a large fowl, confined to the higher parts of the Himalayas. In the two species which are found in India, the sexes appear to be similar in plumage, and there has been some controversy on this subject. After carefully studying the birds of this group in the British Museum, of which there is a large series, I am of opinion that the sexes are alike in colour.

In this group the male is very much larger than the female, and the former is furnished with a large blunt spur on each leg. The tail is of fair size, rounded and composed of as many as 20 or 22 feathers. A lengthened patch behind the eye is bare of feathers and is of a yellow colour in the larger species, red in the smaller. The first quill of the wing is very long, reaching nearly to the tip of the wing; and this character, combined with the large number of tail-feathers, will suffice to separate these birds from all the other Indian game birds.

42. THE HIMALAYAN SNOW-COCK.

Tetraogallus himalayensis, GRAY.

First ten quills of the wing white tipped with black.

Sexes alike.

VERNACULAR NAMES :—*Kullu*, *Lupu*, *Baera*, Western Nepal; *Huinwall*, Kumaon; *Jer-moonal*, Hills north of Mussooree; *Leep*, Kulu; *Kubuk*, *Gourkagu*, Kashmir; *Galound*, Chamba.

THE Himalayan Snow-Cock is found throughout the Himalayas from Kumaon westwards to Kashmir and Hazara, and extends to Gilgit. It ranges to Afghanistan on the west and to Central Asia on the north.

This fine bird inhabits the higher ranges of the Himalayas, being found in summer between 11,000 and 18,000 feet elevation, and descending in winter occasionally as low as 7000 or 8000 feet. It is fond of bare rocky ground. According to Mr. Wilson this bird "is gregarious, congregating in packs, sometimes to the number of twenty or thirty, but in general not more than from five to ten; several packs inhabiting the same hill. In summer the few that remain on our side are found in single pairs generally; but across the snow, where the great body migrate, I almost always, even then, found several together."

Colonel Biddulph, who met with this Snow-Cock in Gilgit, remarks:—"Common everywhere in favourable ground. It makes its nest at about 8000 or 9000 feet, and breeds early. Directly the young are hatched they go up to the lower edge of the snow—in fact as high as they can. . . . I have never seen these birds in large flocks like *T. tibetanus;* they are generally in pairs only. In the depth of winter, a few collect together, but when disturbed separate at once.

Mr. Hume speaks of the shy nature of these birds, and states that they can seldom be approached nearer than 100 yards, and that a bag can only be made with a rifle.

In Gilgit this bird breeds at the end of April or the commencement of May and constructs its nest in localities which vary in elevation from 8,000 to 10,000 feet. According to Mr. Wilson it breeds in other parts of the Himalayas at elevations from 12,000 to 17,500 feet and, but very rarely, on the southern side of the snows.

The nest of this species is said to be a hole scratched in the ground near a stone or bush. The eggs are usually five in number, oval in shape and fairly glossy. The ground-colour is a stone-colour tinged with olive or brown and the whole egg is spotted with reddish brown. They measure from 2·5 to 2·8 in length and from 1·75 to 1·98 in breadth.

In the male and female, the crown, the back of the neck and the mantle are grey. The whole upper plumage, with the greater part of the visible portions of the closed wing, is ashy-grey finely vermiculated with black, the feathers of the rump and the wings being bordered with rufous or chestnut. The middle tail-feathers are rufous grey mottled with black ; the others more or less chestnut marked with black. The first ten quills of the wing are white broadly tipped with black. The sides of the head and of the neck are white. A broad chestnut band stretches from the eye over the ear, expanding into a large patch on the shoulder, and another chestnut band margins the throat. The breast is white, each feather with a black band across it. The lower plumage is dark grey freckled with black, and the sides of the body are streaked with black and chestnut.

When this bird is not quite adult, the feathers of the forehead are mottled with brown.

Male : length about 26 ; wing 12 ; tail 8 ; Female : length about 22 ; wing about 11, tail rather more than 7 ; legs red ; irides brown ; bill horn-colour ; skin behind the eye yellow. Weight up to 6½ lb.

43. THE TIBETAN SNOW-COCK.

Tetraogallus tibetanus, GOULD.

First ten quills of the wing brown tipped with white.

Sexes alike.

VERNACULAR NAMES :—None known.

THE Tibetan Snow-Cock has been observed at many points along the Himalayas, just within the northern limits of the Indian Empire from Sikhim westwards to Kashmir. Its proper home is to the north of the Himalayas, in Turkestan, Tibet and Western China.

This Snow-Cock is found at elevations varying from 15,000 to 19,000 feet in summer, and lower down in the winter, but to what level it descends has apparently not been ascertained.

According to Dr. Scully, who met with these birds in the Sanju Pass, "they associated in coveys of from ten to twenty, and were not very shy. When approached from below they moved leisurely up hill, stopping every now and then to look at one, but when shot at or alarmed they flew downwards very swiftly, uttering a pleasant musical whistle. I found their flesh most delicious eating."

Colonel Prjevalski has a very interesting note on this species. He says: "These birds are very wild, and when alone the old birds do not allow themselves to be approached within a hundred paces. They hide themselves between stones and usually spring up and take to flight, or else try to run, which they do so fast that a man cannot catch them. We noticed that when they are approached from the bottom of a hill they commence running, but if from the top they at once get up. When settling on the ground they shake their tails several times, just as our Willow Grouse do."

Nothing appears to be known about the nidification of this species, but in the Hume Collection there is an egg of this bird which was taken three miles south of the Pangour Tso. It is in all respects similar to some of the eggs of the Himalayan Snow-Cock contained in the same collection, but is of course smaller, measuring only 2·45 by 1·7.

In this bird, the crown and the sides and back of the neck are dark grey. The whole upper plumage, with the greater part of the visible portion of the closed wing, is rufous-grey finely vermiculated with black, the upper portion of the mantle much paler, and the rump and the wings bordered with pale rufous or creamy white. The middle tail-feathers are rufous mottled with black; the others mostly black. The first ten quills of the wing are brown tipped with white. A broad streak from the eye, passing over the ear, is white; also the chin and throat. Across the breast there are two bands of grey with a white band between. The lower plumage is white streaked with black.

In birds apparently not adult, the sides of the neck and the whole breast are mottled and barred with black, grey and rufous.

The sexes in this species do not differ much in size. Length about 20; wing about 10½; tail about 7; legs red; irides brown or reddish brown; bill red in male, greenish in female; skin round the eye red.

THE BAMBOO-PARTRIDGES

THE Bamboo-Partridges form a small group of game birds confined to the Burmo-Chinese countries. They approach the Pheasants in the shape of the wing, and they appear to be closely allied to the Spur-Fowl. They differ from the Partridges in the longer and more graduated tail. Altogether they seem to form a connecting link between the Partridges and the Pheasants.

In the sole species of this group found within our limits, the sexes are alike. The tail, composed of 14 feathers, is rather long and much graduated. The male (sometimes the female also) has a sharp spur on each leg.

The plumage of this Partridge is very handsome, the sides of the body and the lower part of the breast being covered with large heart-shaped black spots. The upper plumage is also much variegated with large black spots, as in the Hill-Partridges. The first ten quills of the wing are chiefly rufous or chestnut, and this character, together with the black spots on the plumage, should suffice to separate this species at once from all other Indian Partridges. The shape of the wing is peculiar, and resembles that of the majority of Pheasants, the first quill being shorter than the tenth.

44. FYTCHE'S BAMBOO-PARTRIDGE.

Bambusicola fytchii, ANDERSON.

Sides of the body covered with large black heart-shaped spots.

First ten quills of the wing chiefly rufous or pale chestnut, unmarked.

Sexes alike.

VERNACULAR NAME :—*Vengte*, Kuki.

FYTCHE'S Bamboo-Partridge was discovered by Dr. Anderson in Yunnan, and it has since been found to have a considerable range within British territory. It occurs in the Khasi and Garo Hills, the North Cachar and Naga Hills, and in Manipur. I recently procured it in the Northern Shan States, between Maymyo and Thibaw, and Mr. Hildebrand not long ago sent me numerous specimens and one egg of this species from the Southern Shan States, east of Toungyi.

This Partridge is said to be shy, to frequent thick tall grass, and to perch on trees.

Mr. Damant, as quoted by Messrs. Hume and Marshall, says:—"This bird occurs in the Garo, North Cachar, and Naga Hills. I have only found it in heavy forest jungle at heights of not less than 2500 feet; it is generally found in pairs, and is difficult to shoot as it will not rise till hard-pressed."

Mr. J. T. Rollo, who shot a bird of this species in the Northern Shan States, observed nothing peculiar about its habits. In fact, when he shot it, he was under the impression that he had shot a Chinese Francolin.

The egg which Mr. Hildebrand sent me, and which is now deposited in the British Museum, measures 1·42 by 1·12. It is oval, with little or no gloss, and of a uniform pale pinkish buff.

The crown of the head is a rich reddish brown, each feather tipped darker. The hindneck and back are grey with broad oval chestnut streaks. The rump and the tail-coverts are olive-brown finely mottled with pale buff and many of the feathers each with a triangular black mark. The first ten quills of the wing are chiefly pale chestnut, perfectly unmarked. The feathers of the visible portion of the closed wing are olive-brown, mottled with white and each feather with a large black mark and some chestnut near the tip. The tail-feathers are pale rufous mottled and barred with buff, the outer feathers becoming quite plain rufous. The throat and sides of the head are pale chestnut, and there is a pale band over the eye with another black band from the eye down the side of the neck. The foreneck and breast are pale ferruginous spotted with white and chestnut. The remainder of the lower plumage is pale ferruginous with large round or heart-shaped black spots on the lower breast and over the whole of the sides of the body.

Length about 14; wing about 6; tail about 4½; legs greenish; irides brown; bill dark brown. Weight up to 14 oz.

THE SPUR-FOWL.

The Spur-Fowl, of which there are three species all peculiar to India and Ceylon, appear to have affinities with the Partridges on the one hand and with the Blood-Pheasants on the other. They are remarkable in having several spurs on each leg, the male sometimes having as many as three, and the female one or two, and very rarely none.

In the Spur-Fowl, the tail is composed of 14 feathers. Of the way in which the tail is carried by a Spur-Fowl in life I am not able to speak from personal observation. Dr. Jerdon, however, states that the tail of these birds is folded as in fowls. Colonel Legge also informs us that the tail of the Ceylon Spur-Fowl is divaricated, but he figures the bird with quite an ordinary tail, differing in no respect from that of a Partridge. Other authors are silent on the subject, and unfortunately no reliance can be placed on the published figures of these birds.

Messrs. Hume and Marshall, for instance, figure all three species of Spur-Fowl, but two appear to me depicted with an ordinary tail, while only the third has a tail at all resembling that of the domestic hen.

Not one of the numerous skins of the Spur-Fowl in the British Museum exhibits even a trace of a folded tail, and I am therefore led to believe that Dr. Jerdon wrote from memory and may have been mistaken. Sportsmen can, however, very easily settle the question for us.

In the Spur-Fowl, the feathers of the crown are slightly lengthened and form a bushy crest about half an inch in length. The first quill of the wing is shorter than the tenth, and this character separates the Spur-Fowl from all the Partridges, except the Bamboo-Partridge. In the Painted Spur-Fowl a space behind the eye only is bare of feathers; in the other two species, not only this but also a space in front of the eye is bare. The sexes differ much in colour and the male exceeds the female in size.

45. THE RED SPUR-FOWL.

Galloperdix spadicea, (GMELIN).

Tail brown, mottled with rufous.

MALE:—Feathers of the lower plumage bright chestnut, margined with grey.

FEMALE:—Feathers of the lower plumage chestnut with a terminal black margin.

VERNACULAR NAMES:—*Chota jungli murghi*, Central Provinces, etc; *Chakatri*, *Chakotre*, *Kokatri*, Syhyadri Range; *Kustoor*, Deccan; *Sarava Koli*, Tamil; *Yerra-Kodi*, *Jitta-Kodi*, Telugu.

THE distribution of the Red Spur-Fowl is not known with any great degree of accuracy, but after examining all the specimens of this bird in the British Museum and all that has been written about its range, I arrive at the conclusion that the northern limit of this species may be defined by a semicircular line starting from the head of the Gulf of Cambay and passing through or near Mount Abu to the foot of the Himalayas where Nepal and Kumaon meet; thence along the Terai to the Gunduk river, and down this river and the western branches of the Ganges to the Bay of Bengal. The area enclosed by this semicircular line and the coastlines of India to the latitude of the Palni hills in Madras will sufficiently indicate the range of this species.

The late Mr. W. Davison thus records his experiences of this bird in the Nilgiris:—"It seems to affect by preference dense and thorny cover in the vicinity of cultivation, but is also found in small isolated patches of jungle or sholas and along the outskirts of the larger forests. . . . When flushed they fly with a cackle, and fly well and strong for a couple of hundred yards. Their flight is very like that of the Kyah Partridge. They are usually found in small coveys of four or five birds, and when flushed do not rise together, but at irregular intervals, dispersing in different directions; they are often found in pairs, and not unfrequently I have come across single birds.

"They come into the open in the mornings and evenings to feed, and wander about a good deal. Even after they have retired into the shade, they do not rest quietly but wander about hither and thither under the trees, scratching about among the dead leaves.

"A well-wooded ravine, with plenty of thorny undergrowth and with a stream of water in it, is always a favourite resort of this species."

In another place, he remarked :—"The male has a partridge-like call heard in the morning and evenings during the cold season."

Colonel W. C. Plowden has the following note about this Spur-Fowl :—"Their habits are vile, as they won't break, and always fly back through the beaters if there is another thicket within 20 or 30 yards; and if they are very hard pressed, we found they would sometimes make an effort to get away. One pair I found in a tree after furious driving and they had been put up several times. Their note I heard three times, when they were a bit pressed. It sounded like coo, coo, coo, coooh very low."

This Spur-Fowl is found at all elevations up to 5000 or 6000 feet.

The Red Spur-Fowl breeds from February to June, and it has been suggested that this bird may have a second brood in the autumn. The nest is a slight structure of a few dead leaves, placed in a hollow in the ground in dense brushwood. The eggs are six to ten in number and vary in colour from a creamy white to a pinkish buff. They have very little or no gloss, and measure from 1·55 to 1·85 in length by from 1·13 to 1·3 in breadth.

The male has the forehead black, each feather edged with grey. The crest and the crown are dark brown. The upper plumage and the visible portions of the closed wings are dull chestnut, all the feathers broadly margined with grey, and, except those on the back, stippled with black. The tail is brown mottled with rufous. The throat and the sides of the neck are greyish brown and the lower plumage is bright chestnut, each feather margined with grey. The lower part of the belly and the thighs are smoky brown. The first ten quills of the wing are plain brown.

The females are of two distinct types, varying in the colour of the upper plumage. In all, however, the forehead is grey streaked with black and the crest and crown are blackish. In the first type, the whole upper plumage and the visible portions of the closed wings are chestnut mottled and barred with black, the whole presenting a somewhat streaked appearance. In the second type the whole upper plumage and the visible portions of the closed wings are buff with large bars and blotches of black, the whole presenting a somewhat barred appearance.

In both types the tail is brown or blackish, mottled with rufous, and the first ten quills of the wing are plain brown. The throat is smoky brown; the foreneck, breast, upper belly and the sides of the body chestnut, each feather terminally margined with black; the lower part of the belly and the thighs smoky brown. The feathers under the tail are black with wavy chestnut bars.

The male is rather larger than the female. Length about 14; wing about 6; tail about 5; legs red; irides yellow, orange-brown or brown; bill horny brown. Weight up to 14 oz.

46. THE PAINTED SPUR-FOWL.

Galloperdix lunulata, (VALENCIENNES).

Tail entirely black.
Space in front of the eye feathered.

MALE :—Upper plumage chestnut, spotted with white.

FEMALE :—Upper plumage plain olive-brown.

VERNACULAR NAMES :—*Askol,* Orissa and Singhboom; *Hootkah,* Chanda District; *Cull-Koli,* Tamil; *Jitta-Kodi,* Telugu.

THE Painted Spur-Fowl appears to be locally distributed over a considerable portion of the Indian peninsula. According to Messrs. Hume and Marshall, the northern limit of this species is a line formed by the Ganges, Jumna and Sind rivers. Its western limit is not so easily defined: all I can gather about it is that this Spur-Fowl has been obtained at Ellichpur and also near Belgaum. To the south, the Painted Spur-Fowl occurs in suitable localities as far as the 11th degree of north latitude. To the east this bird extends to the sea-coast from Cuttack to Pondicherry, wherever there is hilly ground.

Dr. Jerdon has the following note on this species :—" This handsome Spur-fowl is especially partial to rocky jungles and tangled coverts, and is a very difficult bird to flush, taking a short and rapid flight and diving down into some impenetrable thicket. I have often seen it running rapidly across rocks when the jungles were being beaten for large game. From the difficulty of procuring this bird, it is not well known to sportsmen in general, even in districts where it is not rare. . . . The males have a fine cackling sort of call, very fowl-like."

The nest of the Painted Spur-fowl is simply a hollow in the ground under shelter of a rock in a thicket. The breeding season extends from March to June. The eggs do not appear to exceed five. They are pale buff with some gloss, and they measure from 1·55 to 1·65 in length and from 1·07 to 1·15 in breadth.

In the male the crown of the head is black spotted with white. The mantle, back, and all the wing-coverts are rich chestnut with white black-edged spots.

Many of the feathers of the wing have a metallic green gloss. The rump and the tail-coverts are rich chestnut, all the feathers with small white marks and blackish tips. The longer tail-coverts are dark chocolate-brown or blackish. The tail is entirely black. The first ten quills of the wing are plain brown. The throat, foreneck and sides of the neck are black, barred with white. The breast and the upper belly are buff, spotted with black. The sides of the body are chestnut, each feather with a black tip divided into two parts by a white bar. The lower belly is dull chestnut with a few dull white bars, and the feathers under the tail are mixed black and chestnut.

The female has the crown black with a few narrow chestnut streaks. The whole upper plumage is dark olive-brown and the tail black. All the feathers of the wing are very dark brown, but this colour is almost entirely concealed by the broad olive-brown fringes to the feathers. A stripe over the eye is chestnut mottled with black, the cheeks are buff, and the throat mixed chestnut and buff. The foreneck and chest are a dull olive-brown with black tips to the feathers. The breast and the upper belly are clear buff with black marks; and the lower belly with the feathers under the tail are a dull smoky brown.

Length of male about 13; wing about 6; tail nearly 5. The female is rather smaller. Legs plumbeous; irides brown; bill horn-colour. Weight up to 10 oz.

47. THE CEYLON SPUR-FOWL.

Galloperdix bicalcarata, (PENNANT).

Tail entirely black.
Space in front of the eye nude.

MALE :—**Lower plumage white, each feather margined black.**

FEMALE : — **Lower plumage chestnut stippled with black.**

VERNACULAR NAMES :—*Haban-kukula, Saban-kukula*, Ceylon.

THE Ceylon Spur-Fowl is restricted to the island of Ceylon, in many parts of which it appears to be a common bird. It is found up to an altitude of more than 5000 feet.

Colonel Legge remarks of this bird: "The 'Haban-Kukula,' so well known in Ceylon on account of its remarkable cackling note, is one of the shiest birds in the island, affecting the most entire concealment, and only emerging from the jungles in the early morning. It is so wary that, although it may occasionally be surprised or heard close to a path in the forest, it immediately becomes aware of the presence of the enemy, and runs off with great speed, instantly disappearing in the thick jungle. It does not, however, confine itself entirely to forests, as I have sometimes found it in *Lantana*-scrub and detached copses in the south-west of the island; and I have more than once, by rushing into a small thicket with shouts, endeavoured to get it on the wing, but have always failed, as it invariably escaped by darting through the grass and underwood on foot, and thus gained the main portion of the jungle in safety."

The Ceylon Spur-Fowl appears to breed throughout the year, laying its eggs, which are from four to six in number, in a hollow in the ground under some shelter, such as a rock or root of a tree. The eggs are oval in shape, fairly glossy and pale buff in colour. They measure from 1·44 to 1·55 in length and from 1·09 to 1·18 in breadth.

The male has the crown of the head black with minute white streaks. The feathers above and below the nude skin on the side of the head, and those on the sides and back of the neck, are black, each feather with a small oval white drop. The mantle and shoulders are black, margined with chestnut, each feather with a narrow white shaft-streak. Most of the small coverts of the wing are similar, but with a white drop on each; the back, rump and the shorter tail-coverts chestnut. The longer tail-coverts and the tail itself are black. The first ten quills of the wing are plain brown, the others more or less rufous. The lower plumage is white, each feather margined with black, and the whole presenting a scaly appearance. The feathers under the tail are blackish tipped with rufous.

In the female the crown is blackish-brown with rufous streaks. The chin is grey, the throat and sides of the head are smoky-brown mottled with rufous, and the first ten quills of the wing are brown. The tail is black. The whole remaining plumage is dark chestnut very finely vermiculated or stippled with black, and the feather of the breast with brown margins.

Length of male about 14; wing about 6; tail about 4. Length of female about 11; wing 5½; tail 3½. Legs red; irides brown; bill and bare skin of the head red. Weight up to 13 oz.

THE BLOOD-PHEASANTS.

THE singular bird which is the sole representative of the Blood-Pheasants in India is found at high altitudes in the Himalayas.

In this group the sexes are very differently coloured, but they both have a thick crest of soft uniformly-narrow feathers about an inch and a half in length. This character, combined with their size, which is that of a small fowl, and their tail, which is of moderate size, rounded and composed of 14 feathers, should suffice to separate the Blood-Pheasants from all other game birds.

In the male the plumage is much lanceolated, and there are generally two spurs on each leg, occasionally as many as four or five. The plumage of the female is of the ordinary kind and the leg is seldom furnished with a spur.

In the Blood-Pheasants the first quill of the wing is shorter than the tenth, which is nearly equal to the second.

48. THE BLOOD-PHEASANT.

Ithagenes cruentus, (HARDWICKE).

With a crest of soft, uniformly-narrow feathers, 1½ or more in length.
Tail of 14 feathers.

MALE :—With the crest-feathers grey, streaked with buff.

FEMALE :—With the crest-feathers wholly slate-colour.

VERNACULAR NAMES:—*Chilmeah*, *Chilmé*, *Scrimen*, *Selmung*, Nepal; *Samé*, *Semo*, *Soomong Pho*, Sikhim.

THE Blood-Pheasant occurs at high altitudes throughout Nepal, Sikhim and, according to Messrs. Hume and Marshall, Western Bhutan. Mr. Mandelli procured it in Tibet, probably just beyond native Sikhim.

Dr. W. T. Blanford, who observed this species in Sikhim, says, with reference to its habits: "All that I saw were in the pine forests around Yeomatoung, where they were tolerably abundant. They rarely take flight even when fired at, but run away and often take refuge on branches of trees. I have shot five or six out of one flock by following them up; they usually escape up hill, and if, as frequently takes place, the flock has been scattered, after a few minutes they commence calling with a peculiar long cry, something like the squeal of a kite. The only other note I heard was a short monosyllabic note of alarm; I have heard a bird utter this when sitting on a branch within twenty yards of me." He adds that the birds were excellent eating, probably because at the season when he shot them they were not feeding upon pine or juniper.

Dr. Hooker, as quoted by Dr. Jerdon, remarks: "This, the boldest of the Alpine birds of its kind, frequents the mountain ranges of Nepal and Sikhim, at an elevation varying from 10,000 to 14,000 feet, and is very abundant in many of the valleys, among the forests of Pine (*Abies webbiana*) and Juniper. It seldom or never crows, but emits a weak cackling noise. When put up, it takes a very short flight and then runs to shelter. During winter it appears to burrow under or in holes amongst the snow, for I have snared it in January in regions thickly covered with snow, at an altitude of 12,000 feet.

I have seen the young in May. The principal food of the bird consisting of the tops of the pine and juniper in spring, and the berries of the latter in autumn and winter, its flesh has always a very strong flavour, and is, moreover, uncommonly tough; it was, however, the only bird I obtained at those great elevations in tolerable abundance for food, and that not very frequently. The Bhoteas say that it acquires an additional spur every year; certain it is that they are more numerous than in any other bird, and that they are not alike on both legs. I could not discover the cause of this difference, neither could I learn if they were produced at different times. I believe that five on one leg, and four on the other, is the greatest number I have observed."

The eggs of this species are not known. Those of an allied Chinese species are thickly speckled with reddish brown.

The male has the forehead, the space between the eye and the bill, and a broad circle round the eye black, the latter intermingled with some crimson. The crown of the head is buff and the crest-feathers are grey, each feather with a buff streak down the centre. The hind-neck and the mantle are deep grey, each feather with a white shaft-streak. The remaining upper plumage is deep grey, each feather with a narrow stripe of pale green bounded on either side by a black stripe, and many of the tail-coverts with broad crimson margins. The first ten quills of the wing are brown, each with a white shaft-streak which becomes broader near the tip of the feather. The tail-feathers are pale grey, becoming black at the base, and each feather margined with crimson. The chin and throat are crimson, most of the feathers with yellowish tips and shafts. The sides of the neck and a gorget under the throat are green, each feather margined with black. The lower plumage is pale green, each feather margined darker on both sides and the breast more or less blotched with crimson. The feathers under the tail are crimson tipped with yellow.

The female has the forehead and the front part of the crown, with the sides of the head, rather bright ferruginous. The crest and the hindneck are slate-colour. The whole upper plumage and closed wings are reddish brown, very finely vermiculated all over with dark brown or black. The tail is dark brown, a good deal mottled with reddish brown. The first ten quills of the wing are brown with darker shafts. The chin and throat are ferruginous, and the whole lower plumage is reddish brown mottled and vermiculated on almost every part with dark brown.

Length of male about 18; wing 8½; tail about 6½. Length of female about 16; wing nearly 8; tail less than 6. In both sexes the legs are intense red, the irides brown to reddish brown and the bill black. In the male the bare parts of the head are deep red, in the female yellow carmine. Weight up to 20 oz.

THE PEACOCK-PHEASANTS.

The Peacock-Pheasants have very beautiful plumage, adorned with brilliant ocelli. The sexes do not differ very markedly, but the female has the ocelli less brilliant than the male. The males are remarkable for the number of spurs on the leg; two or three on each being the usual number, and occasionally four. This feature induces me to place these birds near the Spur-Fowl and the Blood-Pheasants.

In these birds the feathers of the crown and of the hindneck are very soft and disintegrated. The feathers on the front part of the crown and on the forehead are slightly lengthened, but cannot be said to form a crest. The tail of the Indian representative of this group is composed of twenty feathers. These are graduated, soft and broad, and form a very large convex tail. In the case of a female bird in captivity which had chickens, it was observed that these always took shelter under their mother's ample tail and only left it when they had to run forward to pick up food.

Mr. Hume once procured from the

Lushai country the tail-feathers of a male Peacock-Pheasant which apparently belonged to an unknown species. These tail-feathers were similar to those of Germain's Peacock-Pheasant, which occurs in Cochin China; but it is so extremely unlikely that this bird should occur in the Lushai Hills that it seems certain that a new species of Peacock-Pheasant remains to be discovered in the Lushai and Chin Hills. It will have the tail of Germain's Peacock-Pheasant, but its body-plumage will no doubt differ. When rediscovered it will bear the name Mr. Hume conferred on it —viz., *Polyplectrum intermedium.*

The tail-feathers, as described by Mr. Hume, are hair-brown spotted with pale buff, and with elongated, oval, emerald-green ocelli.

A bird which I once obtained from Bhamo and named *P. helenæ* afterwards proved to be a young specimen of the Grey Peacock-Pheasant.

There is a species of Peacock-Pheasant, *P. bicalcaratum*, which occurs in the Malay Peninsula and may hereafter be found in Tenasserim. It has a pair of ocelli or brilliant spots on each of the middle pair of tail-feathers, and a single spot on the other tail-feathers, situated on the outer web.

49. THE GREY PEACOCK-PHEASANT.

Polyplectrum chinquis, (MÜLLER.)

MALE :—Ocelli on the mantle and wings round and brilliant.

FEMALE :—Ocelli on the mantle and wings black, blotchy, with little or no gloss.

VERNACULAR NAMES :—*Munnowar*, *Deyo-dahuk*, Assam ; *Deo-durug*, *Deo-dirrik*, Garo Hills ; *Doun-kalah*, *Shway-doun*, Burma ; *Kat-moir*, Chittagong.

THE Grey Peacock-Pheasant occurs on the outer slopes of the Himalayas from Sikhim to the extreme eastern part of Assam, and thence southwards through all the mountains and hill ranges of the Indo-Burmese countries to Mergui in Tenasserim. As to its eastern limits in Burma, this Pheasant has been observed at Bhamo, in Upper Burma; and at Papun and in the Thoungyin valley, in Tenasserim. This bird, however, is found in Siam, and therefore the line of its eastern limit cannot be defined even roughly.

This Pheasant is found on or near hills, and it has been procured as high as 6000 feet of elevation, but it appears to be not uncommon also at low elevations, near the level of the sea.

This species is very shy, frequenting the densest portions of the forest on hill-sides and ravines. It is generally found singly or in pairs, and is one of the most difficult of birds to approach, owing partly to its wariness and partly to the difficult nature of the ground it affects.

Mr. Inglis remarks:—"About the beginning of the year the male begins to call in the early morning and late in the afternoon; perched on the bough of a tree, or on the top of a stump, about eight or ten feet from the ground, he emits his loud call-note about every half-minute. This call is often kept up for an hour or two at a time, and can be heard on a quiet morning a very long way off. Then is the time to stalk him, but it requires a large amount of patience and perseverance to do it successfully, as you have only the sound to guide you, and after approaching within about one hundred yards of your game, it is unsafe to proceed except during the calls; thus you can only advance a few yards per minute."

The call of this Pheasant is said to resemble the words *qua-qua-qua*, and in places frequented by these birds they may be made to call by firing off a gun.

Mr. R. A. Clark, whose remarks are quoted by Messrs. Hume and Marshall, found a nest of this bird in Cachar in May. The nest was placed at the foot of a large bush which stood amongst some grass and cane jungle, and was composed of twigs and leaves roughly put together and lined with a few feathers. The eggs are described as being of a *café-au-lait* colour, but the number found is not mentioned.

Some eggs laid in captivity are said to have been of a creamy or buffy white and to have measured 2 inches in length by 1·44 in breadth.

The male has the crown and crest mottled with black and white and the hindneck barred very finely with grey and brown. The whole upper plumage, wings and tail are brown, dotted all over with white; the feathers of the mantle and wings, each with a brilliant round metallic purple or violet spot surrounded by a whitish ring; the feathers of the tail each with a pair of large oval steel-blue or metallic green ocelli, each of which is surrounded by a double ring, the inner of which is black and the outer grey. The throat is white and the whole lower plumage dark brown mottled and dotted with white.

The female has the whole upper plumage, the closed wings and tail dark brown or blackish, the feathers of the rump with small triangular white marks, the feathers of the back and wings each with a large black patch near the tip, more or less glossy or metallic, and fringed with a series of whitish spots. All the tail-feathers, except the middle pair, have a pair of bright but ill-defined metallic ocelli. The throat is white and the lower plumage brown mottled with buff.

Length of male about 25; wing about 8; tail about 13. Length of female about 20; wing about 7½; tail 9. Legs plumbeous or blackish; irides white; bill brown to black; skin of face pale yellow.

THE HORNED PHEASANTS.

THE superb Pheasants which form this group occupy the Himalayas and the mountains of Assam and Upper Burma, extending into China. Four out of the five known species are found within our limits.

In the males of this group the plumage is beautifully spotted; the sides of the head are naked or merely sprinkled with some bristles; an erectile process or fleshy horn springs from either side of the head, just behind the eye, and frequently three inches in length in the breeding season; and the naked throat is at the same season produced into a gular flap of brilliant colour, capable of expansion at times of excitement. The crest is pointed, composed of soft narrow feathers, and about two inches in length, and there is always one spur on each leg.

The female is devoid of all ornaments about the head, which is entirely clothed with feathers. The crest is similar to that of the male, but much shorter, being only about one inch in length.

In both sexes the tail is rounded and comparatively short, composed of 18 and occasionally 20 feathers. The outermost feather of the tail extends beyond the middle point of the centre pair. The first quill of the wing falls short of the tip of the wing by more than one inch and frequently by two inches.

The plumage of the females of this group is very plain, and they are not easily distinguishable from each other ; nor are they distinguishable from the females of the next group, the Moonal-Pheasants, by any point of structure that I can discover except the size of the bill.

50. THE CRIMSON HORNED PHEASANT.

Tragopan satyra, (LINNÆUS).

MALE:—Lower plumage crimson with round white or grey spots, each surrounded by a black border.

FEMALE:—Plumage very rufous, the upper parts with triangular buff marks; both webs of the quills of the wing much marked with rufous.

VERNACULAR NAMES:—*Loongee*, Garhwal and Kumaon; *Moonal*, Nepal; *Tirriak-pho*, Lepcha; *Omo*, *Bup*, Bhutia; *Nunal*, Sikhim; *Dafia*, Bengal.

THE Crimson Horned Pheasant is found in the Himalayas from Garhwal to Bhutan. In the summer this bird occurs up to the altitude of 12,000 feet, and at that time is not often met with below 8000 feet. In winter it comes down to about 7000 feet.

Mr. Hume, as usual, has some excellent notes on this Pheasant, and I shall quote some of them:—"Although always on hills near to or bordering on the snow, they are never seen amongst it (except perhaps in winter) and seem to shun it, as much as the Blood Pheasant delights in it. Even the Moonal will be seen high above the forest, well up on grassy slopes, fringed with and dotted about with patches of snow. But the Tragopan is essentially a forest bird, rarely if ever wandering up towards the snow or into the open, and though frequenting perhaps rather their outskirts than their deeper recesses, it hardly ever voluntarily quits the shelter of the woods and their dense undergrowth.

"Except by chance, when you may come upon a male sunning himself or preening his feathers on some projecting rock or bare trunk of a fallen tree, these birds are never to be seen, unless by aid of three or four good dogs, who will speedily rouse them up, or of a trained shikari, who will call them out by cleverly imitating their loud bleating cry.

"If you ever catch a passing glimpse of them, it is but for a second; they drop like stones from their perch and dart away with incredible swiftness, always running, *never*, so far as I have seen, rising, unless you accidentally almost walk on to them or have dogs with you."

In the spring these birds are continually calling, and Dr. Jerdon remarks that they have a low deep bellowing cry, sounding like *Waa-ung, waa-ung.*

This Pheasant breeds in the forests and dense patches of bamboo that lie below the snow. Mr. Hume had eggs brought to him which were taken in Kumaon in May. These eggs are no longer in the Hume Collection. There is, however, a single egg of this species in the British Museum, laid in captivity in the London Zoological Gardens, which corresponds well with the description of the eggs of this Pheasant given by Mr. Hume. It is oval, with very little gloss. The ground-colour is white with a slight tinge of buff, and the shell is speckled all over with pale lilac. The egg measures 2·45 by 1·8.

In the male bird the lateral portions of the crest are crimson. With this exception, the crest and the whole head and throat are black. The mantle is rich crimson. The general aspect of the upper plumage is olive-brown mottled and marked with black and buff, the wings dashed with crimson, and each feather with a round white or pale grey spot surrounded by a black border. The tail is black mottled with rufous except on the terminal portion. The quills of the wing are much barred and marked with rufous on both webs. The general aspect of the lower plumage is crimson with round white or pale-grey spots, each of which is surrounded by a black border.

In the female the upper plumage and the wings are mottled and vermiculated in an irregular manner with black and rufous, and most of the feathers have a triangular or spearhead-shaped buff mark. The quills of the wing are boldly barred and mottled with rufous. The tail is black with wavy rufous bars. The lower plumage is sandy rufous, often mixed with grey, mottled with black and most of the feathers with a buff streak or patch.

Length of male about 26; wing about 11; tail about 10; throat and the skin round the eye purplish blue; gular flap orange-coloured with narrow blue bars at the sides; the horns bright lazuline blue. Length of female about 23; wing about 9; tail about 8. In both sexes the legs are flesh-coloured; the irides brown; the bill dark brown. Weight up to 4 lb. 10 oz.

51. THE WESTERN HORNED PHEASANT.

Tragopan melanocephalus, (GRAY).

MALE :—Lower plumage black with round white spots.

FEMALE :—Lower plumage with round or oval white spots, each more or less edged with black; the inner webs of the quills of the wing nearly plain.

VERNACULAR NAMES :—*Jowar*, Garhwal; *Jaghi*, *Jajhi*, Busahir; *Sing-monal*, N.W. Himalayas; *Fulgoor*, Chamba; *Jigurana*, *Jeejurana*, male, *Bodal*, female, Kulu, Mandi, etc.

THE Western Horned Pheasant is found in the Himalayas from Garhwal to Kashmir, and according to Mr. Hume even to Hazara; but the series of skins in the Hume Collection is defective in specimens from the extreme north-west, and we cannot trace the limits of this species in Kashmir and beyond. This Pheasant does not anywhere meet the Crimson Horned Pheasant, the range of the two species being, according to Mr. Hume, separated by a distance which he refers to as a four days' march.

"Mountaineer," as quoted by Dr. Jerdon, gives an interesting account of the habits of this species. He says:—"Its usual haunts are high up, not far from the snows, in dense and gloomy forests, either alone or in small scattered parties. In winter they descend the hills, and then their favourite haunts are in the thickest parts of the forest of Oak, Chestnut, and Morenda Pine, where the Box-tree is abundant, and where under the forest trees a luxuriant growth of 'Ringall' or the hill Bamboo forms an underwood in some places almost impenetrable. They keep in companies of from two or three to ten or a dozen or more, not in compact flocks, but scattered widely over a considerable space of forest, so that many at times get quite separated, and are found alone. If undisturbed, however, they generally remain pretty close together, and appear to return year after year to the same spot, even though the ground be covered with snow, for they find their living then on the trees. If driven away from the forest by an unusually severe storm, or any other cause, they may be found at this season in small clumps of wood, wooded ravines, patches of low brushwood, etc.

"At this season, except its note of alarm when disturbed, the Jewar is altogether mute, and is never heard of its own accord to utter a note or call of any kind; unlike the rest of our Pheasants, all of which occasionally crow or call at all seasons. When alarmed, it utters a succession of wailing cries, not unlike those of a young lamb or kid, like the syllables "*Waa*, *waa*, *waa*," each syllable uttered slowly and distinctly at first, and more rapidly as the bird is hard pressed or about to take wing. Where not repeatedly disturbed, it is not particularly shy, and seldom takes alarm till a person is in its immediate vicinity, when it creeps slowly through the underwood, or flies up into a tree; in the former case continuing its call till again stationary, and in the latter till it has concealed itself in the branches. If several are together, all begin to call at once, and run off in different directions, some mounting into the trees, others running along the ground. . . . Their flight is rapid, the whir peculiar, and even when the bird is not seen, may be distinguished by the sound from that of any other. . . . Early in April they begin to pair, and the males are then more generally met with than at any other period; they seem to wander about a great deal, are almost always found alone, and often call at intervals all day long. When thus calling, the bird is generally perched on the thick branch of a tree, or the trunk of one that has fallen to the ground, or on a large stone. The cry is similar to the one they utter when disturbed, but is much louder, and only one single note at a time, a loud energetic "*waa*," not unlike the bleating of a lost goat, and can be heard for upwards of a mile. It is uttered at various intervals, sometimes every five or ten minutes for hours together, and sometimes not more than two or three times during the day, and most probably to invite the females to the spot."

As noted in the second edition of the "Nests and Eggs of Indian Birds," Mr. Hume received six eggs of this species from Captain Unwin, who found them in May in the Hazara country. The nest was roughly formed of grass, small sticks and a few feathers. Four of these eggs are now in the British Museum. They are elongated ovals without any gloss. The ground-colour is reddish buff, and they are thickly and minutely freckled with reddish brown. The six eggs as measured by Mr. Hume varied in length from 2·4 to 2·55, and in breadth from 1·68 to 1·72. They are quite unlike the egg of the Crimson Horned Pheasant already referred to, but very similar to the eggs of the Grey-bellied, and Temminck's, Horned Pheasants as described below.

The male has the whole head and crest black, the latter tipped with crimson. The whole neck is rich crimson and the chest fiery red, the feathers of the latter part much pointed and harsh to the touch. The general aspect of the upper plumage is buff, barred and mottled with black and olive-brown, and each feather with a white spot surrounded by black. The tail is black barred with buff except at the tips of the feathers. The quills of the wings are barred with buff on both webs. The general aspect of the lower plumage is black, each feather with a large round white spot.

The female is of a general greyish brown colour mottled and barred with black and pale buff. The hindneck is generally suffused with rufous. The lower plumage is paler, and each feather has, near the tip, a round or oval white spot surrounded, or nearly so, by a black border. The quills of the wing are mottled with pale buff on the outer web, but the inner web is almost plain brown, there being only a few buff marks on the edge farthest from the shaft.

Length of male about 27; wing about 10½; tail about 10½. The sides of the head are red; the horns blue, and the gular flap purple in the middle, spotted and edged with pale blue and fleshy on the sides. Length of female about 23; wing about 9½; tail about 9. In both sexes the legs are greyish or flesh-colour and the irides brown. The weight is up to 4½ lb.

52. TEMMINCK'S HORNED PHEASANT.

Tragopan temmincki, (J. E. GRAY).

MALE :—Lower plumage crimson with large oval grey spots.

FEMALE :—Lower plumage with large white blotches ; quills of the wing much marked with rufous on both webs.

VERNACULAR NAMES :—None known.

IT was about 1879 that Captain H. Stevens, of the 42nd Regiment N.I., received this beautiful Pheasant alive from the Mishmi people near Sadiya, at the extreme east of Assam. There can be little doubt that the birds brought to Captain Stevens were captured somewhere in the Mishmi Hills, and I therefore gladly give this species a place among the Indian game birds in the hope that sportsmen on our north-eastern frontier may try and obtain it. It is not unlikely to be found on the mountains that skirt the Irrawaddy river above Myitkyina.

I can find nothing much on record

about this Pheasant in a wild state. Messrs. David and Oustalet remark that it lives on wooded mountains, and that its cry may be rendered by the syllable "*oua*," twice repeated. It occurs in South-western and Central China.

In the British Museum there are several eggs of this Pheasant, some of which were taken in China in May and some laid in captivity in the London Zoological Gardens. Those taken in China are glossy, but those laid in the Gardens are dull. In shape they are regular ovals and the ground-colour is reddish buff. All the eggs are thickly speckled with reddish brown. In length they measure from 2·01 to 2·27, and in breadth from 1·46 to 1·67.

The male resembles the male Grey-bellied Horned Pheasant in many respects. The black band round the head and the band bordering the throat are, however, much broader; the spots on the upper plumage are pearl-grey instead of white; the longer tail-coverts are brown, margined with maroon; and the whole lower plumage, with the sides of the body, is crimson, with large oval grey spots.

The female has the upper plumage, the closed wings and tail a mixture of black rufous and grey, most of the feathers of the back and wings with a triangular whitish patch. The lower plumage is a mixture of black, rufous and buff, a large portion of each feather being occupied by a white blotch. The quills of the wing are boldly barred and mottled with rufous on both webs. The tail is black, mottled and barred with very pale rufous.

Length of male about 25 ; wing nearly 10 ; tail about 8. The horns, the naked skin of the head and the gular flaps are more or less blue, the last barred with red at the sides. Length of female about 23 ; wing about 9 ; tail about 7. In both sexes the legs are reddish, the irides chestnut and the bill black.

53. THE GREY-BELLIED HORNED PHEASANT.

Tragopan blythi, (JERDON).

MALE :—Lower plumage smoky-grey.

FEMALE :—Hardly distinguishable from the female Crimson Horned Pheasant, but rather blacker above, and with the patches or streaks on the lower plumage greyish creamy instead of buff.

VERNACULAR NAMES :— *Hurr-hurrea*, *Soon-sooria*, Assam ; *Gnu*, Naga Hills.

THIS Pheasant, which was discovered by Dr. Jerdon in 1869, has a considerable range. Dr. R. Cran received it from the Daphla Hills, on the north of the Bhramaputra River. On the southern side of the same river, this Horned Pheasant has been observed throughout the hill-tracts extending from Sadiya on the east to the Burrail Range on the west. It was procured by Dr. Watt in Manipur, and Major G. Rippon informs me that he observed this species in the Chin Hills on the road up to Fort White. How much farther south its range may extend is not known.

This Pheasant is found in dense forest country up to an elevation of 10,000 feet, and probably does not occur below 4000 feet. I can learn nothing of its habits, except that the call is said to resemble the syllable "ak."

In the British Museum there is an egg of this Pheasant which was laid in confinement at Sadiya, in Assam. This egg resembles closely the eggs of Temminck's Horned Pheasant in the same collection, and measures 2·42 by 1·71. It has hardly any gloss; the ground-colour is pale reddish buff, and the shell is minutely speckled all over with reddish brown.

In the male the forehead and the middle part of the crown and crest are black. The sides of the crown and crest, the ears, the neck all round and the upper part of the chest are dull crimson. A black band borders the throat and is continued over the ears to the back of the head. The general aspect of the upper plumage and wings is maroon with zigzag buff and black bars, each feather tipped with a whitish round spot surrounded by black. The tail is black, barred with rufous, except near the tips of the feathers. The quills of the wing are barred and mottled with rufous on both webs. The longer tail-coverts are white margined with chestnut and tipped white. The general aspect of the lower plumage is smoky grey, each feather rather paler towards its tip. The sides of the body are adorned with grey spots, each of which has a whitish centre, and each feather has moreover a broad edging of maroon.

The British Museum does not possess a female bird of this species, and I am indebted to the Hon. Walter Rothschild for the loan of two specimens of this sex. These birds closely resemble the female Crimson Horned Pheasant, and do not require a separate detailed description. They are, as already pointed out by Messrs. Hume and Marshall, rather darker above, being decidedly blackish; and the patches or streaks on the feathers of the lower plumage are of a greyish creamy instead of a buff colour. I can discover no other differences that appear to be constant.

Length of the male about 24; wing about 10; tail about 7½; legs brown; irides brown; the naked skin round the eye orange; the horns blue, and the gular flap yellow tinged with blue. The female is smaller than the male in the same proportion as in the other species. The orbital skin in the female is said to be light brown.

THE MOONAL-PHEASANTS.

THE three species of Moonals which are found within our limits are the most gorgeous of the game birds, the males being clothed in rich metallic plumage which vies in brilliancy with that of the Peacocks.

The Moonals may be divided into two sections. In the first (*Lophophorus*) the males have a crest composed of about a dozen very peculiar feathers three inches in length. These feathers have a bare shaft and an oval enlargement at the tip. A small space round the eye is naked.

In the second section (*Chalcophasis*) the male has a very short bushy crest of curly feathers covering the whole crown, and the front portion of the head is naked, with the exception of a small tuft of feathers below each nostril.

In both sections the females have only a small space behind the eye naked.

The tail of all these birds is rounded

and composed of eighteen or twenty feathers. The outermost feathers reach far beyond the middle of the central pair of feathers. The first quill of the wing falls short of the tip of the wing by about two inches. The males have one spur on each leg.

The female Moonals do not differ structurally from the female Horned Pheasants except in regard to the bill, which is much larger in the former group.

Regarding the nomenclature of the Moonal-Pheasants (*Lophophorus*), I am unable to follow the author of the Catalogue of the Game Birds (Cat. B. M. xxii., p. 278) in assigning Latham's name, *P. impeyanus* (Ind. Orn. ii., p. 632), to the Bronze-backed Moonal.

It is true that Latham had previously described *P. impeyanus* under the name of "Impeyan Pheasant" (Gen. Syn. Suppl. i., p. 208, pl. 114, 1787), and that he described, and also figured, the bird with a black back, but this was due, in my opinion, to a very pardonable oversight. Any one who examines the series of skins of the males of the Common Moonal in the British Museum will see at once that, in the great majority of specimens, the white back of this species is completely hidden from sight by the closed wings and the scapular feathers, and that it is a matter of some difficulty to catch a glimpse of any portion of the white on the back, even though the wings be pulled apart. I think it therefore highly probable that both Latham and his artist failed to see any trace of white on the back of the bird, and they concluded that the back was black, like the rump.

There is, however, positive evidence that Latham's bird was the Common, and not the Bronze-backed, Moonal. Referring to a part of the plumage about which there could be no possibility of concealment nor any ground for error, Latham distinctly says, "the under parts of the body, from chin to vent, are dull black, with here and there a greenish gloss." This description applies exactly to the lower plumage of the Common, and not to that of the Bronze-backed, Moonal, in which the whole lower plumage, so far from being a dull black, is resplendent with blue, purple and green reflexions.

Then we have Latham stating that he has seen other male specimens of the same species in the Leverian museum, and he also describes the female. It is quite incredible, therefore, that he could have been describing the Bronze-backed Moonal, a species so rare, even at the present day, that we only know it from the skins of two males sent by Colonel C. H. T. Marshall from a remote part of the Himalayas, within the last twenty years. No skin of the female of this species is known to be in any European Museum, so far as I am aware.

Under these circumstances I am of opinion that Latham's name should continue to be applied to the Common Moonal-Pheasant, and that the rarer species, the Bronze-backed Moonal-Pheasant, should be designated by Colonel Marshall's name, *L. chambanus*.

54. THE MOONAL-PHEASANT.

Lophophorus impeyanus, (LATHAM).

MALE:—Tail entirely chestnut; back white.

FEMALE:—Tail black, with some well-defined bright rufous bars.

VERNACULAR NAMES:—*Lont*, male, *Ham*, female, *Nil-mor*, *Jungli-mor*, Kashmir; *Nilgur*, male, *Nulwai*, female, Chamba; *Manal*, *Neel*, male, *Kururi*, *Karari*, female, Kulu; *Moonal*, male, *Moonalee*, female, *Ghur monal*, *Ruttia-Cowan*, *Ratnal*, *Rat-Kap*, Central Himalayas; *Datteya*, Kumaon and Garhwal; *Dangan*, *Dafai*, *Damphia*, Nepal; *Chamdong*, Bhutia; *Phodong-pho*, Sikhim.

THE Moonal-Pheasant is found throughout the Himalayas from Sikhim, and probably the western portion of Bhutan, to Kashmir. It has been obtained in Chitràl by Colonel Biddulph, and it is found commonly in the Safed Koh, Afghanistan.

This species is usually observed between 6000 and 12,000 feet of elevation, but it is occasionally found as high as 15,000 feet and as low as 4500 feet.

"Mountaineer," as quoted by Dr. Jerdon, has a long and interesting account of the habits of this beautiful bird, from which I give a few extracts:—"The Monaul is found on almost every hill of any elevation, from the first great ridge above the plains to the limits of the wooded district, and in the interior it is the most numerous of the game birds. When the hills near Mussooree were first visited by Europeans, it was found to be common there, and a few may still be seen on the same ridge eastwards from Landour. In summer, when the rank vegetation which springs up in the forest renders it impossible to see many yards around, few are to be met with, except near the summits of the great ridges jutting from the snow, where in the morning and evening, when they come out to feed, they may be seen in the open glades of the forest and on the green slopes above. At that time no one would imagine they were half so numerous as they really are; but as the cold season approaches and the rank grass and herbage decay, they begin to collect together, the wood seems full of them, and in some places hundreds may be put up in a day's work. In summer the greater number of the males and some of the females ascend to near the limits of the forests where the hills attain a great elevation, and may often be seen on the grassy slopes a considerable distance above. In autumn they resort to those parts of the forests where the ground is thickly covered with decayed leaves, under which they search for grubs ; and descend lower and lower as winter sets in, and the ground becomes frozen or covered with snow. . . . In the forest, when alarmed, it generally rises at once without calling or running far on the ground ; but on the open glades or grassy slopes, or any place to which it comes only to feed, it will, if not hard pressed, run or walk slowly away in preference to getting up ; and a distant bird, when alarmed by the rising of others, will occasionally begin and continue calling for some time while on the ground. It gets up with a loud fluttering and a rapid succession of shrill screeching whistles, often continued till it alights, when it occasionally commences its ordinary loud and plaintive call and continues it for some time."

The Common Moonal breeds in May and June, laying its eggs in a depression in the ground at the foot of some rock or large tree, or near bushes, tufts of grass and fern. The nest is frequently the bare ground, but at times it is composed of a little dry grass or a few dead leaves. The eggs vary in number from four to six or even eight, and are oval in shape. The ground-colour is buffy white and the whole egg is generally thickly covered with reddish brown freckles and spots. They measure from 2·41 to 2·69 in length and from 1·7 to 1·89 in breadth.

The male has the crest and the head bright metallic green; the back of the neck bright metallic coppery red. The mantle is bronze-green. The upper back, the greater portion of the visible parts of the closed wings, the rump and the shorter tail-coverts are metallic purple. The back is white. The longer tail-coverts are metallic green; the tail is entirely chestnut. The whole lower plumage is plain black, with here and there a very slight metallic gloss.

In the female, the crown and sides of the head, the sides and back of the neck, the mantle, the upper back and the visible portions of the closed wings are blackish, each feather with an irregular rufous shaft-streak and some rufous lines following the contour of the margin. The rump is pale rufous marked with black. The tail is black with some firm rufous cross-bars and very narrowly tipped with white. The first ten quills of the wing are dark brown. The chin and throat are white. The whole lower plumage is brown, each feather with a pale rufous or whitish shaft-streak and mottled with rufous.

Length of male about 26; wing about 11½; tail about 9. Length of female about 24; wing about 10½; tail about 8. Legs greenish; irides brown; bill brown to blackish; the bare skin on the sides of the face of the male blue. Weight up to 5 lb. 4 oz.

55. THE BRONZE-BACKED MOONAL-PHEASANT.

Lophophorus chambanus, MARSHALL.

MALE :—Tail entirely chestnut; no white on the back.

FEMALE :—Not known.

VERNACULAR NAMES :—None known.

THIS magnificent Pheasant, which is even more gorgeous than the Common Moonal, was discovered by Colonel C. H. T. Marshall in the Chamba State, N.-W. Himalayas, where it appears to be restricted to the Birnota Forest.

This species is very rare in collections, and the British Museum only possesses two specimens, both males. The female is unknown.

The male bird has a very general resemblance to the male Common Moonal-Pheasant, but differs, however, conspicuously in having the back of a bronze or brown colour and not white. The lower plumage also differs in being highly glossed with blue, purple and green reflexions. A third distinction is that some of the feathers covering the base of the tail above are rich maroon with glossy green tips.

The length of a male bird is about 26; wing about 12; tail about 9.

56. SCLATER'S MOONAL-PHEASANT.

Chalcophasis sclateri, (JERDON).

MALE :—**Tail chestnut, broadly tipped with white.**

FEMALE :—**Tail black with narrow wavy creamy-white bars and tipped with the same for the space of about one inch.**

VERNACULAR NAMES :—None known.

NOTHING is known about Sclater's Moonal-Pheasant except that it inhabits the Mishmi Hills which are situated in the extreme eastern part of Assam, beyond Sadiya.

About 1870, when Dr. Jerdon was in Assam, he observed a live male bird of this species in the possession of Major Montagu. This specimen was eventually sent to the Zoological Gardens of London, and on its death the skin was deposited in the British Museum.

Subsequently Colonel Godwin-Austen procured the skin of a female bird of this species also from the Mishmi Hills, and Mr. Hume a skin of a male from the same locality, and these two specimens are in the National Collection.

It is very probable that this fine species may be found to occur in some of the mountains north and east of Myitkyina in Upper Burma.

The male has the short curly feathers of the crown rich metallic blue. The back and sides of the neck are copper-colour. The mantle and the greater part of the visible portions of the closed wings are a rich metallic purple, and a large patch near the bend of the wing is metallic green or bronze. The back, rump and the tail-coverts are white with some of the shafts black. The tail is chestnut with a broad white tip, the base of the feathers black with narrow wavy white bars. The lower plumage is black with a slight gloss in places.

The female has the crown, the sides of the head and the whole neck blackish, each feather with a triangular rufous mark. The mantle, the back and the visible portions of the closed wings are blackish mottled with rufous, and each feather has a long, narrow, jagged, rufous streak down the middle. The rump and the tail-coverts are pale creamy buff narrowly and irregularly barred with black. The tail is black mottled with rufous, narrowly barred with creamy white and tipped with a broad band of the same colour. The first ten quills of the wing are dark brown. The throat is white and the lower plumage umber brown finely vermiculated with buff and with the shafts of some of the feathers paler.

Length of male about 26; wing about 12; tail about 9. Length of female about 24; wing about 10½; tail about 8. In the male, the naked skin on the sides of the head is blue; irides brown, legs brown; bill yellowish horny.

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and the tail-coverts. The feathers of the train are of great length, beautifully ocellated and capable of being erected and held in a vertical position with the assistance and support of the stiff tail-feathers.

Two species of Pea-Fowl are at present known, one being peculiar to India, but the second having a wide distribution throughout the Indo-Burmese and Siamese countries.

Pea-Fowl occur in large flocks, and are polygamous.

57. THE COMMON PEA-FOWL.

Pavo cristatus, LINNÆUS.

Feathers of the crest with a bare shaft and a fan-shaped tip.

MALE :—Back and rump with glossy scale-like green feathers.

FEMALE :—Back and rump with ordinary brown feathers.

VERNACULAR NAMES :—*Mor*, Hind. ; *Menjur*, Western Duars ; *Mujur*, Nepal Tarai ; *Mabja*, Bhutia ; *Mong-yung*, Lepcha ; *Moir*, *moira*, Assam ; *Dodé*, Garo Hills ; *Myl*, Tamil ; *Nimili*, Telugu ; *Nowl*, Canarese.

THE Common Pea-Fowl is found in a wild state, in suitable localities, throughout India ; on the west up to the Indus river, and on the east to the farthest limits of Assam. It is also found in Ceylon.

In Assam, this Pea-Fowl frequents the whole valley of the Bhramaputra, and occurs on all the hill-ranges south of that river, with the exception, perhaps, of the Khasi Hills. The southern limits of this species in the Indo-Burmese countries have not been ascertained, and we do not know with any precision where this and the next species meet.

The Common Pea-Fowl does not ascend the Himalayas to any great height, 2000 feet being the usual limit. In the Nilghiris, however, and other ranges of hills in Southern India, it is met with as high as 5000 feet or even higher.

This Pea-Fowl by choice frequents hilly and jungly ground, where there is an abundance of water and good cover. In many parts of India, it is protected by the natives, and under these circumstances becomes very tame. Where not so protected, this bird appears to be as wild as its Burmese ally. I glean the following notes from the many accounts which have been published regarding the habits of this Pea-Fowl.

Colonel Tickell observes:—"Pea-Fowl roost at night on high trees: the highest they can get in the jungle they inhabit; but they select the lowest branches for their perch. They are rather late in roosting; I have heard them flying up to their berths long after sunset, and when the Night Jars had been for some time abroad, flitting over the dusky jungle.

The cock bird invariably leads the way, rising suddenly from the brushwood near the roosting tree, with a loud '*Kok-kok-kok-kok*,' and being presently followed by his harem—four or five hens. . . . These birds cease to congregate soon after the crops are off the ground. The pairing season is in the early part of the hot weather. The Peacock has then assumed his full train, that is, the longest or last rows of his upper tail-coverts, which he displays of a morning, strutting about before his wives. These strange gestures, which the natives gravely denominate the Peacock's *nautch*, or dance, are very similar to those of a turkey-cock, and accompanied by an occasional odd shiver of the quills, produced apparently by a convulsive jerk of the abdomen."

Mr. Sanderson, as quoted by Messrs. Hume and Marshall, has some useful remarks on this species. He says:— "Pea-Fowl usually commence their discordant cries at half-past two in the morning, and not unfrequently cry at intervals throughout moonlight nights. They raise a shrill clamour during the day on seeing tigers or other beasts of prey, or at unusual sounds, such as the firing of a gun in the jungles.

"Pea-Fowl run very fast, but the old cocks, burthened with tails six feet in length, are poor flyers, and I have frequently seen my men running them down during the hot hours of the day by forcing them to take two or three long flights in succession, in places where they could be driven from one detached patch of jungle to another.

"The old cocks are in full plumage from June to December, and then cast their trains."

It will be seen that Colonel Tickell and Mr. Sanderson are not quite in agreement regarding the time of the year in which the train of the male bird is developed. I am unable to decide which of the two is right.

The ordinary cry of the Peacock resembles the words "*Pehau*, *pehau*," and can be heard a long distance.

Pea-Fowl breed in India from June to October, but a nest has been found in Mysore as early as April. In Ceylon they breed from January to April. The nest is made in thick grass or amongst dense bushes, and is merely a depression in the ground scratched by the hen and lined with a few leaves or a little grass. In flooded parts of the country the

Peahen has been known to lay her eggs in the fork of a large mango-tree. The eggs vary in number from six to as many as fifteen. They are very glossy and closely pitted all over with minute pores. In shape they are ovals, and the colour varies from almost pure white to reddish buff. Occasionally eggs are met with which are thickly freckled with reddish brown, but the majority are entirely unspotted. The eggs vary in length from 2·55 to 3 in length and from 1·92 to 2·2 in breadth.

It is unnecessary to describe the plumage of the Peacock in detail, or to do more than point out the characters by which the present species differs from the Burmese Peacock. The shape of the crest-feathers is in itself, however, quite sufficient to separate the two species.

The chief points about the Common Peacock are that the whole head, the neck and the upper parts of the mantle and breast are a rich purplish blue. The first ten quills of the wing and their coverts are chestnut; a number of the succeeding quills are black; and the remaining quills and all the wing-coverts, except those already mentioned, are pale buff irregularly barred with black.

The female has the crest, the head and the upper neck more or less chestnut; the lower neck, the upper part of the mantle and the breast greenish, the feathers edged with brown. The upper plumage and the greater part of the visible portions of the closed wings are brown, the tail-coverts and the outer part of the wing being barred with buff. The tail is blackish mottled with buff. The chin, the throat and portions of the sides of the head and neck are white. The lower plumage is rufous buff.

The length of a fine male to the end of the tail is about 45, and to the end of the train about 90; wing about 18; tail about 20. The female measures nearly 40 in length, the wing about 16, the tail about 14. Legs, irides and bill more or less brown; naked skin of the face whitish. Weight up to a little more than 11 lb.

58. THE BURMESE PEA-FOWL.

Pavo muticus, LINNÆUS.

Feathers of the crest uniformly narrow, with no expansion at the tip.

MALE :—**Back and rump with glossy scale-like green feathers.**

FEMALE :—**Back and rump with ordinary brown feathers, barred and mottled with buff.**

VERNACULAR NAMES :—*Doun*, *Oodoun*, Burmese ; *Marait*, Talain ; *Toosia*, Karen.

THE Burmese Pea-Fowl takes the place of the Indian species, south of Assam. The meeting line of the two species is at present undetermined, but we know that on the west the range of the Burmese species extends up to Chittagong, in which district it appears to be the only Pea-Fowl ; and that on the east this species is found abundantly at Myitkyina, high up on the Irrawaddy river. Our knowledge of the range of the two species in the country between Chittagong and Myitkyina is a blank. Mr. Hume unfortunately met with neither species in Manipur, so he was unable to throw any light on the distribution of these birds.

The Burmese Pea-Fowl occurs over every part of Burma down to the extreme south of Tenasserim. It is probably found also all over the Shan States. I observed it far from uncommon near Lashio.

Outside our limits this species is distributed over the Malay Peninsula, Siam, Cochin China and Java.

This Pea-Fowl is very locally distributed, and is by no means generally abundant. It affects particular localities to the exclusion of others which appear to be equally suitable to its habits. The places frequented by colonies of these birds are generally well known to the natives, for the birds remain there constantly. In some parts of Upper Burma this Pea-Fowl is very abundant, and on some of the higher reaches of the Irrawaddy, above the third defile, large flocks may be seen in the mornings and evenings on the sand-banks and shingly margins of the river. I have counted as many as fourteen in one flock. Wherever this bird is found it is extremely shy, and it is not often secured with the shot-gun.

The train of this Peacock commences to grow at the autumn moult, and by the end of November attains its greatest development. Magnificent trains may be observed in December. Throughout the greater part of the dry weather the train is preserved intact, but gradually the tips of the feathers get worn down and some of the feathers drop out, and by the commencement of the rains little of the train remains.

I have never been able to obtain any information regarding the nesting of Pea-Fowl in Burma, and I have never had any of their eggs brought to me.

The Burmese Pea-Fowl differs from the Indian species in many important particulars, both as regards the plumage and the shape of the crest.

In the Burmese bird the head alone is blue. The whole neck and the upper part of the mantle and breast are covered with rounded scale-like feathers of a greenish bronze colour, each feather having a purplish centre and a narrow black margin. The first ten quills and their coverts are chestnut, but all the remaining quills are black or dark brown. The wing coverts, except those mentioned above, are green and purple, but not barred with black and buff as in the Indian species. The other parts of the plumage closely resemble the corresponding parts in the Indian Peacock.

The Peahen resembles the Peacock in the colour of those parts described above, except that the inner feathers of the wing are barred and mottled with buff. She differs from the male, however, in having the whole back and rump brown barred with buff, the brilliant scale-like feathers of the male on those parts being entirely absent.

The length of the male to the end of the tail is about 45; the total length to the end of the train is sometimes 90; wing about 19; tail about 22. The female measures about 40 in length; wing about 17; tail about 16. Legs dark brown; irides dark brown; bill blackish; naked skin of face partly blue, partly yellow. Weight up to 11 lb.

THE ARGUS-PHEASANTS.

WITH the Argus-Pheasants we begin a series of Pheasants which are characterised by a straight, narrow, graduated tail, generally of great length.

In both sexes of the Argus-Pheasant, the sides of the head, the throat and the front and sides of the neck are naked or covered with only a few scattered bristles. The crest is extremely short; the tail is composed of twelve feathers; there is no spur on the leg; and all the quills of the wing, except the first ten, are greatly lengthened and very wide, especially in the male.

In the male bird, the tail is about four feet in length, and the middle tail-feathers are more than twice the length of any of the others. The lengthened feathers of the wing are beautifully marked with large ocelli.

In the female the tail is rather more than one foot in length, and there are no ocelli on the lengthened feathers of the wing. The occipital hairy crest is rather more developed than in the male.

Two species of Argus-Pheasants are known. One only occurs within our limits, the second being found in Borneo. An allied species of Argus is recorded from Tonquin.

59. THE ARGUS-PHEASANT.

Argusianus argus, (LINNÆUS).

Tail of twelve feathers; the inner quills of the wing much longer than the first ten quills.

MALE :—With large ocelli on wings; tail about four feet in length.

FEMALE :—No ocelli on wings; tail rather more than one foot in length.

VERNACULAR NAME :—*Kyet-wah*, Siamese in Bankasoon.

THIS magnificent Pheasant is found within our limits only at the extreme south of Tenasserim, about Maliwun and Bankasoon. It extends down the Malay Peninsula to Sumatra, and is also found in Siam..

The habits of this bird were exhaustively observed by the late Mr. W. Davison, when he was collecting birds for Mr. Hume in Tenasserim, and I shall quote portions of Mr. Davison's very interesting account. He wrote:—"They live quite solitarily, both males and females; every male has his own drawing-room, of which he is excessively proud and which he keeps scrupulously clean. They haunt exclusively the depths of the evergreen forests, and each male chooses some open level spot—sometimes down in a dark gloomy ravine, entirely surrounded and shut in by dense cane brakes and rank vegetation—sometimes on the top of a hill, where the jungle is comparatively open—from which he clears all the dead leaves and weeds for a space of six or eight yards square, until nothing but the bare clean earth remains, and thereafter he keeps this place scrupulously clean, removing carefully every dead leaf or twig that may happen to fall on it from the trees above.

"These cleared spaces are undoubtedly used as dancing grounds, but personally I have never seen a bird dancing in them, but have always found the proprietor either seated quietly in, or moving backward and forwards slowly about, them, calling at short intervals. Except in the morning and evening, when they roam about to feed and drink, the males are always to be found at home, and they roost at night on some tree quite close by.

"They are the most difficult birds I know of to approach; a male is heard calling, and you gradually follow up the sound, taking care not to make the slightest noise, till at last the bird calls within a few yards of you and is only hidden by the denseness of the intervening foliage; you creep forward, hardly daring to breathe, and suddenly emerge on the open space, but the space is empty; the bird has either caught sight of or heard or smelt you, and has run off quietly. They will never rise even when pursued by a dog if they can possibly avoid it, but run very swiftly away, always choosing the densest and most impenetrable part of the forest to retreat through. . . . . The males are not at all quarrelsome, and apparently never interfere with each other, though they will answer each other's calls. The call of the male sounds like '*how-how*,' repeated ten or a dozen times, and is uttered at short intervals when the bird is in its clearing, one commencing and others in the neighbourhood answering. The report of a gun will set every male within hearing calling, and on the least alarm or excitement, such as a troop of monkeys passing overhead, they call. The call of the female is quite distinct, sounding like '*how-owoo*, *how-owoo*,' the last syllable much prolonged, repeated ten or a dozen times, but getting more and more rapid until it ends in a series of *owoo's* run together. Both the call of the male and female can be heard to an immense distance, that of the former especially, which can be heard at the distance of a mile or more. Both sexes have also a note of alarm, a short sharp hoarse bark.

"The female, like the male, lives quite solitarily, but she has no cleared space, and wanders about the forest apparently without any fixed residence. The birds never live in pairs, the female only visiting the male in his parlour for a short time.

"I was unable to find the nest, but from what I could learn, the female builds a rude nest on the ground in some dense cane brake, laying seven or eight eggs, white or creamy, minutely speckled with brown like a turkey's, and hatching and rearing her brood without any assistance from the male. They are said to have no regular breeding season, the females laying at all times except during the depths of the rains."

It is impossible to describe the plumage of these birds at all minutely, and I shall therefore content myself with merely pointing out the chief features of the plumage of the two sexes in a brief manner.

In the male the crest and crown are black and the back of the neck barred with brown and grey. The mantle and almost the whole of the visible parts of the closed wing are black barred and spotted with buff. The back and rump are chestnut spotted with black. The lower plumage is beautifully marked with undulating bars of black, rufous and buff. The first ten quills are of normal length, and variegated with spots of different shapes and colours. The other quills are of extraordinary length, black, barred with buff on their outer edge and with a series of large ocelli on the outer web next the shaft. The middle two tail-feathers are chiefly rufous on the outer, grey on the inner, web, and spotted with black and white; the others are chiefly rufous, spotted in a similar manner with black and white.

In the female the crown and crest are blackish marked with buff. The upper part of the mantle is chestnut slightly marked with black. The lower part of the mantle, the back and the rump are deep chestnut barred with black and buff. Almost all the visible parts of the closed wing are black, coarsely vermiculated with buff. There are no ocelli on the quills. The whole lower plumage is chestnut vermiculated with black. The tail-feathers are variegated with black and chestnut.

Length of male about 70; greatest length of wing about 34; tail about 50. Length of female about 30 inches; greatest length of wing about 17; tail up to 16. Legs red; irides brown; bill pale bluish white; bare skin of head blue. Weight up to 5½ lb.

THE CHEER-PHEASANTS.

THE only species of this group has the general form of our English Pheasant, but is crested and has the plumage non-metallic. The sexes resemble each other closely in general coloration.

The tail of this Pheasant is of great length, straight, pointed and composed of eighteen feathers. These are much graduated, the outermost feather falling very far short of the middle point of the central pair. The crest is composed of soft and narrow feathers, quite three inches long in the male and two inches in the female. The male has a spur on each leg. In both sexes the sides of the head are naked and crimson, this space being large in the male, but smaller, and confined to a large circle round the eye, in the female. The male has no ear-tufts.

The only species known is confined to the Himalayas.

60. THE CHEER-PHEASANT.

Catreus wallichii, (HARDWICKE).

MALE:—Mantle pale buff, barred with black and pale blue bands.

FEMALE:—Mantle chestnut, each feather with a pair of black oval spots.

VERNACULAR NAMES:—*Kahir*, *Chihir*, Nepal; *Cheer*, Kumaon, Garhwal; *Bunchil*, *Boinchil*, *Herril*, Hills north of Mussooree; *Chummun*, *Chaman*, Chamba, Kulu, etc.

THE Cheer-Pheasant inhabits the lower ranges of the Himalayas from the valley of Nepal to Chamba. I cannot discover that this Pheasant has been met with farther east or west of these limits, but it probably may have a larger range. According to season this bird lives at elevations varying from 4000 to 10,000 feet.

For the habits of this very fine Pheasant we must again go to "Mountaineer." He says:—"It is an inhabitant of the lower and intermediate ranges, seldom found at very high elevations and never approaching the limits of forest. Though far from being rare, fewer perhaps are met with than of any other kind, unless it is particularly sought for, always excepting the Jewar. The reason of this may be that the general character of the ground where they resort is not so inviting in appearance to the sportsman as other places; besides, they are everywhere confined to particular localities, and are not like the rest scattered indiscriminately over almost every part of the regions they inhabit. Their haunts are on grassy hills, with a scattered forest of oak and small patches of underwood, hills covered with the common pine, near the sites of deserted villages, old cowsheds, and the long grass amongst precipices and broken ground. They are seldom found on hills entirely destitute of trees or jungle, or in the opposite extreme of deep shady forest; in the lower ranges they keep near the tops of the hills, or about the middle, and are seldom found in the valleys or deep ravines. Farther in the interior, they are generally low down, often in the immediate vicinity of the villages; except in the breeding season, when each pair seek a spot to perform the business of incubation, they congregate in flocks of from five or six to ten or fifteen, and seldom more than two or three lots inhabit the same hill. They wander about a good deal on the particular hill where they are located, but not beyond certain boundaries, remaining about one spot for several days or weeks, then shifting to another, but never entirely abandoning the place, and year after year may to a certainty be found in some quarter of it. .... Both males and females crow at daybreak and dusk, and in cloudy weather sometimes during the day. The crow is loud and singular, and when there is nothing to interrupt the sound, may be heard for at least a mile. It is something like the words *chir a pir*, *chir a pir*, *chir chir*, *chirwa*, *chirwa*, but a good deal varied; it is often begun before complete daylight, and in spring, when the birds are numerous, it invariably ushers in the day. In this respect it may rival the domestic cock. When pairing and scattered about, the crow is often kept up for near half an hour, first from one quarter, then another, and now and then all seem to join in as a chorus. At other times it seldom lasts more than five or ten minutes. The Cheer-Pheasant feeds chiefly on roots, for which it digs holes in the ground; grubs, insects, seeds and berries, and, if near cultivated fields, several kinds of grain form a portion; it does not eat grass or leaves like all the rest of our Pheasants. It is easy to rear in confinement, and might without difficulty be naturalised in England, if it would stand the long frosts and snows of severe winters, which I imagine is rather doubtful. The female makes her nest in the grass or amongst low bushes, and lays from nine to fourteen eggs of a dull white and rather small for so large a bird. They are hatched about the end of May or beginning of June. Both male and female keep with the young brood and seem very solicitous for their safety."

The eggs have a slight gloss and are of a pale buff colour with, generally, one or the other end speckled with reddish brown; but some eggs are quite plain. They measure from 2·05 to 2·22 in length and from 1·47 to 1·56 in breadth.

The male has the crown and crest brown, the feathers tipped with grey. The throat and a ring round the neck are whitish. The mantle, the back and the smaller wing-coverts are pale buff barred with black, each feather with a narrow grey tip and a bar of pale blue. The remaining visible portions of the closed wings are largely bright buff marked with black. The rump is chestnut, barred with black. The tail is buff, broadly barred with mixed black and chestnut. The lower plumage is pale buff, irregularly barred with black.

In the female the feathers of the crown and crest are edged with buff. The sides and back of the neck are black with whitish margins. The mantle is chestnut, each feather with a pair of black oval spots. The remainder of the upper plumage is a mixture of black, pale buff and rufous, the feathers of the mantle, of the back and of the wings with a pale shaft-streak. The tail is buff barred and mottled with black and rufous. The throat is whitish, the breast black, each feather of the latter part edged with buff, and the belly is chestnut, the feathers edged paler.

Length of male up to 40; wing about 10; tail up to 23. Length of female up to 30; wing about 9; tail up to 15. Legs plumbeous brown; irides reddish; bill horny brown; naked facial skin crimson. Weight up to 3½ lb.

THE TRUE PHEASANTS.

The typical Pheasants, or those which resemble our common English Pheasant in structure, are represented within our limits by a single species which has recently been found to occur in the Northern Shan States. Probably other species may be met with presently in that large mountainous territory.

In the true Pheasants the tail is composed of 18 feathers and is long, straight, narrow and pointed. The feathers are much graduated, the outermost pair falling far short of the middle point of the central pair. The feathers of the rump are very soft, long and ample, and fall over the base of the tail.

In both sexes the feathers of the crown are somewhat lengthened, forming a very short blunt crest.

The male has the sides of the head naked and brilliant red; a pair of ear-tufts pointing backwards; and a spur on each leg.

The sexes in the true Pheasants are very different in colour, and the male is considerably larger than the female.

61. STONE'S PHEASANT.

Phasianus elegans, ELLIOT.

MALE :—Lower plumage dark steel-blue.

FEMALE :—Lower plumage buff with black crescentic bars.

VERNACULAR NAMES :—None known.

THIS beautiful Pheasant inhabits the province of Sechuen in Southern China, and was brought to notice about 1870 by Mr. Stone, who succeeded in bringing two live specimens to London.

About the same time Dr. Anderson met with this Pheasant at Momein in the province of Yunnan, at an elevation of 5000 feet. He informs us that it is common on the grassy hills round Momein.

Quite recently, Lieut. H. R. Wallis procured a cock-bird of this species in the Northern Shan States and generously presented the skin to the British Museum. He obtained it in December at an elevation of about 5000 feet. The precise locality where Lieut. Wallis shot the bird is in 23° 45′ north latitude and 99° 15′ east longitude.

The male has the crown of a bronze colour, each feather with a concealed white bar on it. The remainder of the head is glossy green, and the whole neck is glossy purplish blue. The mantle is chestnut, each feather edged or tipped with greyish bronze and with a small black streak at the tip. The feathers of the rump and back are black, each with a wavy white cross-band and a double terminal green band, the inner deep, and the outer light, green. The tail-coverts have long green fringes. There is a patch of chestnut on each side of the base of the tail. The tail-feathers are rufous buff with a series of double black spots at intervals of about three-quarters of an inch. Most of the wing-coverts are pale blue, some of the larger ones nearer the body being dashed with chestnut. The breast and belly are steel-blue with green and coppery reflexions. The sides of the body are coppery or chestnut, all the feathers tipped with black. The first ten quills of the wing are mottled with pale buff.

In the female the neck and the sides of the head are barred with black and buff. The throat is whitish or very pale buff. The feathers of the mantle are chestnut in the middle, followed by a curved band of black and a pale buff margin. The remainder of the upper plumage is more or less black dashed with rufous and buff. The first ten quills of the wing are barred with buff on both webs. The tail is rufous, irregularly, but rather closely, barred with black. The lower plumage is a pale or sandy buff with black crescentic bars.

The male is about 27 in total length; wing nearly 9; tail about 15. The female measures about 21 in total length; wing 8; tail nearly 10. The bare skin of the face in the male is crimson.

THE BARRED-BACKED PHEASANTS.

THE Pheasants of this group differ from the true or typical Pheasants in many points of structure. The tail is composed of only sixteen feathers, and the feathers of the rump, instead of being very long, soft and copious, are of the ordinary kind, short, firm, and rounded at the tip. The male has no ear-tufts.

The male has the sides of the head naked and brilliant red, but the female has merely a patch round the eye naked and of that colour. The feathers of the crown in both sexes are merely lengthened, forming a very short blunt crest.

Although the male has a tail which quite resembles in shape the tail of the true Pheasants, the female has the tail proportionately much shorter and broader than is the rule among the females of that group.

Of the two species now described, one

is found to the west of the Irrawaddy River and the other to the east. A third species inhabits China. In this last the male may be known by the whole belly being white, and the female by the throat being black.

62. MRS. HUME'S BARRED-BACKED PHEASANT.

Calophasis humiæ, HUME.

MALE :—The feathers of the back and rump blue narrowly margined with white.

FEMALE :—All the tail-feathers, except the middle pair, chestnut tipped with a double band of black and white.

VERNACULAR NAME :—*Loi-nin-koi*, Manipur.

THIS lovely species was discovered by Mr. Hume in Manipur in 1881. The only two birds of this species which he was fortunate enough to obtain in that country were brought in to him by natives, and consequently Mr. Hume acquired no personal knowledge of the habits of this Pheasant. What little he was able to learn about this bird from the natives is summed up in the following note :—" According to the accounts of my savages these birds live in dense hill forests at elevations of from 2500 feet (the height of the lower end of the Manipur plain, or, as it is miscalled, valley) to fully 5000 feet. They prefer the neighbourhood of streams and are neither rare nor shy. They extend right through the Kamhow territory into Eastern Looshai and North-west Independent Burmah.”

“That they occasionally stray up the Jhiri valley well into Manipur is probable, and they may occur not only where we procured them, in the extreme south of that state, but also probably in the southern portion of its eastern hills.”

Of a live bird which he kept for a few days until it was accidentally killed, Mr. Hume observes :—“The live bird, though a full-grown cock, became perfectly tame in a few days, and a great favourite in the camp. It would eat bread, boiled rice, winged white-ants, moths, taking them gingerly out of our hands.”

Shortly after Mr. Hume discovered this Pheasant, Colonel Godwin-Austen's collectors obtained specimens of it on the Shiroifurar Peak in Manipur at 8000 feet.

In the male the crown, back of the head and the ears are brown, the feathers at the sides of the crown with white bases which form an imperfect band. The throat, the neck all round, the upper mantle and the upper breast are glossy bluish black, each feather with a triangular black velvet spot. The lower mantle and lower breast are rich maroon with similar black spots. The back and rump are pale blue, each feather with a narrow white fringe. The closed wings are maroon with two broad white bands and a broader intermediate bluish-black band. The first ten quills of the wing are dark brown on the inner web, rufous on the outer; all the other quills of the wing tipped with a double bar, the first of which is black and the other or terminal portion white. The lower plumage below the breast is rich maroon and the feathers under the tail are black. The two outer tail-feathers are black mottled with grey at their base; the next pair is black mottled with grey and with a broad black tip; the next four pairs are grey barred with black; the middle pair is grey with eight bars, the first four of which are black followed by a more or less indistinct band of chestnut, and the last four are more or less chestnut with a median narrow black band.

The general colour of the female is brown; the upper plumage much blotched with black and each feather of the mantle with a triangular white mark; the feathers of the lower plumage fringed paler. The first ten quills of the wing are barred with buff on the outer web. The middle tail-feathers are rufous, freckled and barred with black; the others are chestnut, tipped with a double band, the first portion of which is black and the terminal white.

Length of male about 33; wing $8\frac{1}{2}$; tail 21; legs brown; irides orange; bill greenish. Length of female about 22; wing 8; tail about $7\frac{1}{2}$. The facial skin in both sexes is crimson.

63. THE BURMESE BARRED-BACKED PHEASANT.

Calophasis burmannicus,* OATES.

MALE :—The feathers of the back and rump black broadly margined with white.

FEMALE :—Undistinguishable from the female Mrs. Hume's Barred-backed Pheasant.

VERNACULAR NAME :—*Yit*, Burmese.

THE Burmese Barred-backed Pheasant is allied to, but quite distinct from, the preceding species. So far as is known, the present species occurs only on the hills which lie partly in Burma and partly in the Shan States, from the Ruby-Mines district down to Kalaw in the Thamakan State. It is probable that this species occurs farther east, at Toungyi, for Mr. A. H. Hildebrand informs me that he once met with a Pheasant at that place which resembled in shape the

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* I described this new species in the *Ibis*, 1898, p. 124.

English Pheasant, but he was unable to get it.

The British Museum has two pairs of this Pheasant in its collection of birds. One pair was presented by Mr. F. Atlay, who procured both birds in the Ruby-Mines district, and another pair was presented by Major G. Rippon, who, writing of the birds of Kalaw, Southern Shan States, remarks :—"I obtained only one male and one female of this handsome Pheasant. The female was shot after a long run up the side of a hill. When first seen she was picking about in a small valley between two pine-clad slopes. The male was got more easily in a rocky valley with a good deal of undergrowth, chiefly bamboo. A man was sent round towards the head of the valley with orders to walk slowly down towards me. The Pheasant, which had been seen to go into a thick clump, presently walked out, and was immediately shot. The skins of both were preserved."

The Burmese Barred-backed Pheasant differs from Mrs. Hume's Barred-backed Pheasant in the following particulars. I put these differences side by side for the sake of clearness :—

	C. humiæ.	*C. burmannicus.*
Rump.	Blue, each feather with a narrow white margin about one-tenth of an inch wide.	Black, each feather with a broad white margin about one-sixth of an inch wide.
Lower White wing-bar.	The concealed parts of the feathers, forming this bar, black.	The concealed parts of the feathers chestnut with a firm black bar between the chestnut and the white tips.
Black wing-bar.	Broad and uniformly black.	Imperfect, the black mixed up with large patches of chestnut.
Mantle.	Upper part black, lower maroon.	The whole mantle maroon.
Tail.	Only the middle pair of feathers distinctly barred with chestnut.	Not only the middle pair, but the next four pairs, distinctly barred with chestnut.

Male birds, not fully mature, do not have these characters so well marked as old birds.

The females of the two species do not appear to differ in any respect.

Both species are of the same size.

THE KOKLASS-PHEASANTS.

Three species of this group inhabit the Himalayas, and a fourth, as noted below, may probably be observed in British territory hereafter.

The Koklass-Pheasants differ from nearly all the Pheasants in having no nude skin on the side of the head. The male bird has a crest of very remarkable form. The feathers are all narrow and soft, and whereas those of the central portion of the crest are only two inches in length, those at the sides are fully twice this length. The middle portion of the crest is also of a different colour to the lateral portions. The crest of the female is bushy and rather more than one inch in length. The plumage of the male is lanceolate throughout, but the plumage of the female possesses this character in a less marked degree.

The tail when expanded is wedge-shaped, and composed of 16 feathers, the outermost being half the length of the middle pair. The male has one large spur on each leg.

Some of the outer webs of the quills of the wing in both sexes of these Pheasants are coloured rufous, and this character being very constant, may be serviceable for the purpose of discriminating these birds.

A fourth species of this group (*Pucrasia castanea*) has been known for very many years. The original specimens, which Mr. Gould described and figured, are supposed to have been procured in Kafiristan, but the matter is doubtful. This Pheasant may possibly be found in Kashmir. It may be recognised by the colour of the upper part of the mantle and neck, which is dark chestnut like that of the lower plumage. The sides of the body are chestnut, or chestnut mixed with a little black.

64. THE COMMON KOKLASS-PHEASANT.

Pucrasia macrolopha, (LESSON).

MALE :—Upper plumage and sides of the body ashy streaked with black; the feathers of the breast and belly rich chestnut.

FEMALE :—General colour rufous streaked with black; throat white.

VERNACULAR NAMES :—*Phokrass*, Kumaon and Garhwal; *Koklass*, *Kokla*, Almora to Simla; *Koak*, Kulu, Mandi; *Plas*, Kashmir; *Kukrola*, *Kuk*, Chamba.

THE Common Koklass or Pukras-Pheasant is found in the Himalayas from Kumaon to the extreme western border of Kashmir. It is probable that this species occupies the southern half of Kashmir, and that Marshall's Koklass inhabits the northern half, but our information on this point is incomplete.

This Pheasant ranges from 3000 feet to 14,000 feet of elevation, but the usual limits of its summer residence lie between 6000 feet and 9000 feet.

For the habits of this species I again quote from "Mountaineer." He says :—

"This is another forest Pheasant common to the whole of the wooded regions, from an elevation of about 4000 feet to nearly the extreme limits of forest, but is most abundant in the lower and intermediate ranges. In the lower regions its favourite haunts are in wooded ravines, but it is found in nearly all hill sides which are covered with trees or bushes, from the summit of the ridges to about half way down. Farther in the interior, it is found scattered in all parts, from near the foot of the hills to the top, or as far as the forest reaches, seeming most partial to the deep sloping forest composed of oak, chestnut, and Morenda pine, with box, yew and other trees intermingled, and a thick underwood of Ringall.

"The Koklass is of a rather retired and solitary disposition. It is generally found singly or in pairs; and except the brood of young birds, which keep pretty well collected till nearly the end of the winter, they seldom congregate much together. Where numerous, several are often put up at no great distance from each other, as if they were members of one lot; but when more thinly scattered, it is seldom that more than two old birds are found together; and at whatever season, when one is found, its mate may almost to a certainty be found somewhere near. This would lead one to imagine that many pairs do not separate after the business of incubation is over, but keep paired for several successive years. In forests where there is little grass or underwood, they get up as soon as aware of the approach of any one near, or run quickly along the ground to some distance; but where there is much cover they lie very close and will not get up till forced by dogs or beaters. When put up by dogs, they often fly up into a tree close by, which they rarely do when flushed by beaters or the sportsman himself, then flying a long way and generally alighting on the ground. Their flight is rapid in the extreme, and after a few whirs they sometimes shoot down like lightning. They sometimes utter a few low chuckles before getting up, and rise sometimes with a low screeching chatter and sometimes silently. The males often crow at daybreak and occasionally at all hours."

The Koklass breeds from April to June and deposits from five to nine eggs in a hole scraped in the ground under the shelter of a bush or stone or at the foot of a tree. The eggs are buff, speckled with reddish brown, and measure from 1·85 to 2·29 in length, and from 1·39 to 1·57 in breadth.

The male has the middle and shorter feathers of the crest buff, the lateral and longer feathers, together with the whole head, glossy black, and a large patch of white on each side of the neck. The whole upper plumage and the wings are ashy, each feather with a black streak down the middle. The quills of the wing are dark brown, except the outer web of the second to the sixth, which is rufous. The middle tail-feathers are chestnut tipped with grey; the others have the inner web black and the outer web chestnut at the base and black towards the end and the whole feather tipped with white. The foreneck, the breast and the belly are rich chestnut. The sides of the breast and the sides of the body are ashy streaked with black like the upper plumage. The feathers under the tail are deep chestnut tipped with white.

The female has the whole upper plumage and visible portion of the closed wings rufous buff much mottled and blotched with black and many of the feathers with rufous shaft-streaks. The quills of the wing are dark brown with the outer web of the second to the sixth quill rufous. The tail is largely chestnut marked with black and tipped with white. A broad rufous band spotted with black passes over the eye to the lateral feathers of the crest. The sides of the head are rufous, barred with black. The chin, the throat and a diagonal band down the side of the neck are white, all the feathers at the sides and base of the throat being fringed with black. The lower plumage is pale rufous, both webs of each feather with a long triangular black streak. The belly is very pale buff, marked with black. The feathers under the tail are mixed black and chestnut and tipped white.

Length of male about 24; wing about 9½; tail about 10. Length of female about 21; wing nearly 9; tail about 7½. Legs ashy; irides dark brown; bill black. Weight up to 2 lb. 14 oz.

65. MARSHALL'S KOKLASS-PHEASANT.

Pucrasia biddulphi, MARSHALL.

MALE :—The upper plumage and sides of the body ashy streaked with black; the breast and belly dull dark chestnut, each feather margined with black.

FEMALE :—Not differing apparently from the female Common Koklass-Pheasant.

VERNACULAR NAMES :—None known.

MARSHALL'S Koklass-Pheasant has hitherto only been obtained in Kashmir. One of the specimens in the British Museum was procured by Colonel Biddulph at Gilgit. The exact origin of the other specimens is not known. We are simply informed by the labels attached to them that they come from Kashmir. It is, however, probable that the present species ranges over the northern part of that country and that the Common Koklass-Pheasant inhabits the southern part only.

This species was described in 1879 by Colonel G. F. L. Marshall from a specimen sent to him by Colonel Biddulph. It seems to me a very recognisable species.

Nothing is recorded of the habits of this Pheasant, but it is hardly possible that they should differ in any respect from those of the Common Koklass.

No separate description of this Pheasant is necessary. The male differs from the male Common Koklass-Pheasant in having the chestnut of the breast continued on both sides of the neck so as to form a nearly complete collar. The colour of this collar, of the breast and of the belly, is a dull dark chestnut, not a rich chestnut as in the commoner species, and each feather of these parts is distinctly margined with black. In one specimen these margins are so broad that the general colour of the breast and belly appears to be a dark chocolate.

The female appears to be of quite the same colour as the female Common Koklass and undistinguishable from it.

Marshall's Koklass and the Common Koklass do not appear to differ in size.

66. THE NEPAL KOKLASS-PHEASANT.

Pucrasia nepalensis, GOULD.

MALE :—The upper plumage and the sides of the body black, each feather narrowly margined with ashy.

FEMALE :—Not differing apparently from the female of the other two species of this group.

VERNACULAR NAME :—*Pokrass*, Nepal.

THE Nepal Koklass-Pheasant inhabits the interior of Nepal. Dr. Scully informs us that this species is not uncommon in the western portion of the Nepal Himalayas, but does not occur in any part of the hills so far to the east as the valley of Nepal. All the specimens I have seen have been procured by Mr. Hodgson or Dr. Scully, and many of them bear signs of having been kept in captivity.

Dr. Scully remarks :—" Unfortunately I can give no details about the habits of this Pheasant from personal observation; it is said to be plentiful about Jumla, where it is found not far from the snows. In confinement the birds became very tame and seemed to prefer green leaves and shoots, etc., to grain, for food."

The male of this species has the same general style of coloration as the male Common Koklass-Pheasant, but differs in having the feathers of the entire mantle and the sides of the breast and body deep black, very narrowly margined with ashy; the back, rump, and the shorter feathers over the tail being similarly deep black but with broader ashy margins; and every part of the visible portions of the closed wings also deep black, with broad chestnut margins. The feathers of the mantle, in some males, have broad chestnut margins in the place of narrow ashy ones. The breast and belly are of the same rich chestnut as in the Common Koklass.

The female does not differ apparently in any particular from the female Common Koklass.

The dimensions of this species are slightly smaller than the corresponding dimensions of the Common Koklass, and it is not necessary to give them separately.

THE KALIJ- AND SILVER-PHEASANTS.

THIS, the largest group of Indian Game Birds, is of very wide distribution throughout the Himalayas and Burma. Of the eleven species found within our limits, three species are now described for the first time, and probably others remain to be discovered.

The term "Kalij" has been hitherto applied to the four species of the group which inhabit the Himalayas. In the males of these species the upper plumage is black, with the exception of certain white fringes which are to be found on the rump of three of the species. I retain the term "Kalij" for these four species.

I apply the term "Silver" to those Pheasants of the group in which the upper plumage is vermiculated or otherwise irregularly marked with white, or in some cases with buff. Most of these Silver-Pheasants also have white rump-fringes. The disposition and form of these markings and fringes are of the greatest importance in determining the various species, and have been too little studied.

In the Pheasants of this group, both the sexes have a crest composed of soft, narrow feathers, usually three inches long in the males and somewhat shorter in the females. The male has a large portion of the side of the head naked and of a crimson colour; the female has a smaller portion of the face naked. The male has a strong spur on each leg.

The tail of these Pheasants, composed of 16 feathers, resembles in shape that of our domestic poultry, the two halves of the tail being compressed together. In the male, the middle feathers are long and drooping as in the common cock.

The first three species of Kalij-Pheasants on my list have the plumage lanceolate as in the Koklass-Pheasants. In the fourth species, and in all the Silver-Pheasants, the plumage is of the ordinary kind.

67. THE WHITE-CRESTED KALIJ-PHEASANT.

Gennæus albicristatus, (VIGORS).

MALE:—No portion of the upper plumage vermiculated with white; crest white; back and rump with broad white fringes.

FEMALE:—No white spearhead-shaped marks on the mantle; all the tail-feathers, except the middle pair, glossy black.

VERNACULAR NAMES:—*Kalij*, Hind.; *Kookera*, *Murghi-Kalij*, Hills north of Mussooree; *Kalaysur* (male), *Kalaysee* (female) Kulu, Mandi, Suket, etc.; *Kolsa*, Punjab.

THE White-crested Kalij-Pheasant is found in the lower and middle ranges of the Himalayas from Hazara to Kumaon and probably as far as the extreme western part of Nepal. According to Messrs. Hume and Marshall, this Pheasant occurs in the Siwalik Hills as well.

This species is usually found low down on the outer ranges and their valleys, but in summer it may be met with at an altitude of 9000 or 10,000 feet.

Much has been written on the habits of this common Pheasant. I shall content myself with transcribing a few notes by Captain J. H. Baldwin as quoted by Messrs. Hume and Marshall. He says:—"Its favourite habitat is among thick clumps of bushes and shrubs near the banks of rivers, in low valleys through which streams of water run, and on the slopes of hills where there is plenty of low bush cover, especially thorny thickets bordering on cultivation; in the early morning, the vicinity of an old cowshed is a sure resort of this bird if anywhere in the neighbourhood. I have flushed this Pheasant and the common red Jungle-Fowl from the same description of cover at the foot of the hills. The call of the bird, which may be heard at all times of the day, is a sharp *twut*, *twut*, *twut*, sometimes very low, with a long pause between each note, then suddenly increasing loudly and excitedly."

The peculiar sound the birds of this group make in the breeding season is caused by the flapping of the wings against the body, and is a challenge to other cocks. Captain Baldwin thus describes a scene he was once fortunate enough to witness: "We had been sitting motionless for, I suppose, half an hour, when I was startled, all of a sudden, by the loud drumming noise I have already described close at hand. The sound came from behind, and on looking over my shoulder, my companion, with a smile, pointed out the drummer. An old cock Kalij was squatting on the stump of a fallen tree, and, with its feathers all ruffled and tail spread, was causing this extraordinary sound by rapidly beating its wings against its body."

The White-crested Kalij-Pheasant breeds up to fully 8000 feet, the time ranging from April to June. The eggs vary from nine to fourteen in number, and are laid in a hole scraped in the ground in some underwood and under the shelter of some stone, bush or tuft of grass. A nest was once found on a large low bough of a tree, but this must be a very unusual site for a bird to select. The eggs vary in colour from pale creamy white to rich reddish buff. They are oval in shape and glossy, and they vary in length from 1·85 to 2·03 and in breadth from 1·25 to 1·52.

The male has the crest white, the head

and neck glossy blue black. The mantle and the wing-coverts are black, each feather with a white shaft and a pale grey margin. The back and rump are glossy black, each feather with a terminal white fringe nearly a quarter of an inch in width. The tail is black with the inner web of the middle pair of feathers brownish. The breast and upper belly are greyish white, each feather black at the base, very long and sharp-pointed. The remainder of the lower plumage is smoky brown with pale grey margins, the feathers more or less sharply pointed. The first ten quills of the wing are brown.

The female has the head and crest brown, the feathers with pale shafts. The whole upper plumage is reddish brown, the shafts white, each feather margined with grey and very minutely but distinctly stippled and vermiculated with black. The middle pair of tail-feathers is wavily marked with black and rufous, the others are glossy black. The throat is greyish brown with paler shaft-streaks. The whole lower plumage is dark reddish brown with paler shafts, each feather margined with pale buff and minutely stippled with black. The first ten quills of the wing are brown with the outer webs mottled with buff.

Length of male about 25; wing about 9; tail 10 to 12; length of female about 21; wing about 8½; tail about 8½. Legs brownish grey; irides orange-brown; bill greenish white; bare skin of face crimson. Weight up to 2 lb. 6 oz.

68. THE NEPAL KALIJ-PHEASANT.

Gennæus leucomelanus, (LATHAM).

MALE :—No portion of the upper plumage vermiculated with white; crest black; back and rump with narrow white fringes; lower plumage variegated, not black.

FEMALE :—Undistinguishable from the female White-crested Kalij-Pheasant.

VERNACULAR NAMES :—*Kalich*, *Kalij*, Perbuttia in Nepal; *Rechabo*, Bhutia in Nepal.

THE Nepal Kalij-Pheasant appears to be found throughout Nepal except in the extreme eastern and western portions. According to Dr. Scully this Pheasant extends to the east nearly as far as the Aum river, but there is no certain information about the extension of this species to the west.

Writing of this bird, Dr. Scully tells us that " it is common wherever thick forest is found, from Hetoura in the Dun to the valley of Nepal; in all the wooded hills surrounding the latter up to an elevation of nearly 9000 feet; and in every forest about Noakot. It is usually seen in pairs or in parties of from three to ten, often feeding on the ground near cultivated patches at the borders of forests. The birds seem very fond of perching on trees, and it is usually in this position that one comes across them in forcing one's way through forest which has a dense undergrowth. On such occasions the Kalij first gives notice of its whereabouts by whirring down with great velocity from its perch and then running rapidly out of sight to the shelter of some thicket. In the winter the birds roost on trees at the foot of the hills, and the plan for making a bag is to post oneself about sunset under some trees which they are known to frequent and await their coming. The birds are then soon heard threading their way through the jungle towards their favourite trees and at once fly up and perch. When once settled for the night in this way they are not easily alarmed."

The male of this species resembles the male White-crested Kalij-Pheasant, but has a black crest, and the white fringes on the rump narrower, or about one-tenth of an inch in width. It is of the same size.

The female is undistinguishable from the female White-crested Kalij-Pheasant, and is of the same size.

69. THE BLACK-BACKED KALIJ-PHEASANT.

Gennæus melanonotus, (BLYTH).

MALE :—No portion of the upper plumage vermiculated with white; crest black; back and rump glossy blue-black with velvety black fringes.

FEMALE :—Undistinguishable from the female of the previous two species.

VERNACULAR NAMES :—*Muthuraj*, Bengali; *Kirrik*, Bhutia; *Kirrik-pho*, Lepcha.

THE Black-backed Kalij-Pheasant occupies a comparatively small portion of the Himalayas, being confined to Sikhim, both Native and British, and the western portion of Bhutan. This Pheasant does not ascend to any great height, being seldom found above 6000 or 7000 feet of altitude.

Mr. Gammie has written an excellent account of this bird, and I reproduce a portion from Messrs. Hume and Marshall's work :—" In Sikhim the Black-backed Kalij is abundant from about

1000 up to 6000 feet, and it is occasionally found at both lower and higher elevations. It frequents forest and scrub, rarely coming out to cleared land except in the mornings and evenings to feed, and even then seldom leaving the cover for many yards.

"At no time of the day is it a shy bird, but in the evenings and early mornings it is almost as tame as a domestic fowl, and, if feeding on the road, will leisurely walk but a few steps out of the way of a passer-by.

"It appears to dislike sunshine, and scarcely leaves the shade of trees or shrubs while the sun is up.

"It seldom, if ever, perches in the daytime, but keeps to the ground, unless suddenly disturbed by dogs or wild animals, when it may take refuge in a tree as a last resource. If alarmed by men it always runs along under the scrub if the circumstances are favourable for that mode of escape, but if not, it flies within twenty feet of the ground for forty or fifty yards, and then again alights on the ground. By making a short détour they will be found close to where they alighted."

The Black-backed Kalij-Pheasant breeds

from March to July according to elevation, laying its eggs amidst dead leaves, etc., under cover of bushes without apparently making any nest. The eggs are sometimes ten in number, and vary in colour from creamy white to buff. They measure from 1·79 to 2 in length and from 1·4 to 1·54 in breadth.

In this species the male has a black crest and each of the feathers of the rump with a velvety black, instead of a white, fringe. The other parts of the plumage and the dimensions are the same as in the two preceding species.

The female is quite undistinguishable from the female of the two preceding species both in colour and size.

70. THE BLACK-BREASTED KALIJ-PHEASANT.

Gennæus horsfieldi, (Gray).

MALE :—No portion of the upper plumage vermiculated with white; crest black; back and rump with broad white fringes; the entire lower plumage black.

FEMALE :—Undistinguishable from the female of the previous three species.

Vernacular Names :—*Do-reek*, Assam; *Durug*, *Dirrik*, Garo Hills; *Mathura*, Sylhet and Chittagong; *Yit*, Burmese.

The Black-breasted Kalij-Pheasant occurs in Eastern Bhutan and throughout the lower ranges of the Himalayas up to Sadiya in Assam. South of the Bhramaputra this Pheasant is found in all the hill ranges of Assam, extending on the west through Sylhet and Tipperah to Chittagong, throughout which province it appears to be commonly found. To the east, Mr. Hume met with this bird in Manipur. Still farther east I observed it at Pyimbone in Upper Burma, about fifty miles N.E.

of Katha; and my men many years ago obtained a pair of this Pheasant in the neighbourhood of Bhamo. I cannot trace this bird any farther east or south. There is no evidence that this species occurs in Arrakan.

This Pheasant is usually found low down, and probably does not ascend the hills above 4000 feet elevation.

The habits of the Black-breasted Kalij are not likely to differ from those of its allies. On the one occasion when I had the opportunity of observing it, I found it abundant in the immediate vicinity of a Burmese village. When a beat was organised, fully a dozen birds came out, but they ran about through the bushes and refused to rise. Subsequently in the evening I observed several pairs feeding in the fields on the edge of thick jungle; but they were then very cautious, and retreated up the hill-side at once when I tried to approach them.

This Pheasant breeds from March to June, the eggs being laid on a layer of leaves in a hollow of the ground at the foot of a tree or some similar shelter. Eight or ten is probably the full number of eggs laid. Their colour is buff, and they measure about 1·85 by 1·5.

The male bird has the whole plumage glossy black with glossy blue margins to most of the feathers, and each feather of the back and rump with a terminal white fringe about one-fifth of an inch in width. The plumage is not lanceolate as in the preceding three species.

The female is undistinguishable from the female White-crested Kalij-Pheasant.

In size this Pheasant does not differ from its allies already noticed, but it seems to be a heavier bird, Mr. Hume giving the maximum weight as 2¾ lb.

71. ANDERSON'S SILVER PHEASANT.

Gennæus andersoni, (ELLIOT).*

MALE :—The feathers of the mantle, upper back and wing-coverts, black, with 3 to 6 fine zigzag white lines on each web, running parallel to the margin of the feather; the feathers of the lower back and rump black, vermiculated with white, with a white fringe and a preceding black band; the three outer pairs of tail-feathers black.

FEMALE :—Not known.

VERNACULAR NAME :—*Yit*, Burmese.

THE present species has caused great confusion in the study of the Silver-Pheasants by reason of the incorrect manner in which it was first described. I shall therefore proceed to lay before my readers a brief history of Anderson's Silver-Pheasant.

This Pheasant was discovered by Dr. Anderson in 1868 in the Kachin Hills, east of Bhamo, where he procured a live specimen which was kept in Calcutta for some time. A drawing of this bird, made by a native artist, was sent to Mr. Elliot, who described the bird under the name of *Euplocamus andersoni* (P.Z.S. 1871, p. 137). Subsequently the skin of this very same bird was sent to Mr. Elliot, who re-described and figured it in his "Monograph of the Pheasants," (ii., pl. xxii). The two descriptions of this bird by Mr Elliot differ from each other in a very important particular. In the first description (taken from the drawing) a portion of the plumage is thus described: "entire upper parts greyish white, each feather having three or more black lines running parallel to the edge, and meeting towards the end." This description can only mean that the whole upper plumage was uniformly marked, and that the rump differed in no respect from the back.

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* This is not the *G. andersoni* of Mr. Ogilvie Grant (*Cat. Birds B.M.* vol xxii., p. 306), but the *G. davisoni* of that author (*l.c.* p. 304).

In the second description (taken from the skin) Mr. Elliot says that the "feathers of the rump are like the back, but fringed with white, which overlaps the feather beneath and gives this part a beautiful silvery appearance." From this it seems clear that the rump presented a markedly different appearance to the back.

I am of opinion that when there is a discrepancy of this kind between two descriptions by the same author, we are justified in accepting as correct the description that was taken from the actual skin and not the one based on a native drawing.

Fortunately, however, Dr. Anderson relieved us from any doubt on the subject by sending to the British Museum, in 1875, a skin of Anderson's Pheasant. Of this specimen he says that it agrees with the type in all essential details, but is somewhat younger (Yunnan Exped., p. 670). This skin corresponds quite closely with Mr. Elliot's second description, especially in having beautiful white fringes to the rump-feathers.

It was Mr. Hume, many years ago ("Stray Feathers," vi., p. 437), who first erroneously identified a Silver-Pheasant from Dargwin in Northern Tenasserim with Anderson's Silver-Pheasant. In 1883, when I was writing the "Birds of British Burmah," I followed Mr. Hume, because in those days there was nothing to guide me to a different conclusion.

The case is different now. With the Hume Collection in this country, we are able to institute a comparison between the Tenasserim, and Dr. Anderson's, bird.

The latter corresponds well with Elliot's second, and more accurate, description; was procured in the same locality as the type specimen, and, as Dr. Anderson assures us, resembles the type. The former was procured 450 miles away from the locality where Anderson's Pheasant was found; and does *not* correspond at all with Elliot's second description, where the presence of beautiful fringes to the rump-feathers is specially brought to notice.

The above facts seem to prove conclusively that Dr. Anderson's specimen of a Silver-Pheasant in the British Museum from the Kachin Hills is the true *G. andersoni*, and may be looked upon as the co-type of that species, and further that Mr. Hume's Tenasserim specimen, so far from being *G. andersoni*, does not even bear a superficial resemblance to that bird, being entirely without the typical white rump-fringes of Anderson's Silver-Pheasant. It is therefore very disappointing to find the author of the "Catalogue" imposing a new name on Dr. Anderson's example from the Kachin Hills and following Mr. Hume in identifying the Tenasserim bird with *G. andersoni*.

I shall now proceed to describe Anderson's Silver-Pheasant from the skin of the male bird sent by Dr. Anderson from the Kachin Hills, and now in the British Museum. The female is not known.

The crest is black. The mantle, the upper back and the wing-coverts are black, each feather with several zigzag white lines following the margin of the feather. On the wing-coverts there are usually three of these lines on each web, but on the mantle and upper back five or six. The quills in the closed wing are black, obliquely barred with white. The feathers of the lower back and rump are black, vermiculated rather widely with white lines. Each feather has a white fringe preceded by a black band, the latter occupying the space between the fringe and the first vermiculation. The two middle tail-feathers are black with numerous white lines more or less parallel to the shaft; the others are marked in a similar manner, but progressively with fewer white lines, the three outer pairs becoming practically black throughout. The whole lower plumage is glossy black.

Length about 24; wing nearly 9½; tail about 11. The skin of the face appears to have been crimson and the legs flesh-coloured.

72. THE CHIN-HILLS SILVER-PHEASANT.

Gennæus williamsi, n. sp.

MALE :—The mantle, back and rump black, coarsely vermiculated with buff, the feathers of the rump with a broad white fringe preceded by a firm black band; the wing-coverts with five or six buff lines on each web, parallel to the margin; all the tail-feathers barred with buff.

FEMALE :—The two middle tail-feathers chestnut, mottled with black; the others black, obliquely barred with white, these white bars progressively decreasing in number and extent, the outermost feather becoming practically black.

VERNACULAR NAME :—*Yit*, Burmese.

CAPTAIN F. T. WILLIAMS has kindly sent me a pair of Silver-Pheasants from Kalewa on the Chindwin river in Upper Burma. These birds, a male and a female, are quite distinct from any species I am acquainted with, and I have much pleasure in associating Captain Williams's name with this fine new Pheasant. The two birds have been deposited in the

British Museum (Natural History), South Kensington.

The Chin-Hills Silver-Pheasant, there is little doubt, will prove to be the Silver-Pheasant of the whole of the Chin-Hills, extending a considerable distance north and south of the latitude of Kalewa, and it is to be hoped that other specimens may soon find their way to England.

In the male, the crest is glossy black. The mantle, the back and the rump are black, with a blue gloss on the mantle and back, coarsely vermiculated with buff, the lines being more or less across the shaft of the feather. Each feather of the lower back and rump is terminated by a broad white fringe, one-fifth of an inch wide, preceded by a firm black band occupying the space between the fringe and the first vermiculation. The wing-coverts are black with five or six buff lines on each web, these lines being parallel to the margin of the feather. The exposed part of the quills of the wing are obliquely barred. The tail is black, obliquely barred with buff on all the feathers; the inner web of the middle pair of feathers more densely barred with buff than the others. The entire lower plumage is glossy bluish black.

The female has the general colour of the upper plumage and wings reddish brown, each feather edged paler and minutely freckled with black. The throat is ashy white. The whole lower plumage is ashy brown, each feather edged with greyish white, and with a conspicuous greyish white shaft-streak. The two middle tail-feathers are chestnut, mottled and barred with black; the next pair is black, the inner web mottled with pale chestnut, the outer web black mottled with white and broadly edged with chestnut; the other feathers are black, mottled and barred with white, the white progressively decreasing in amount, the outermost feather being almost entirely black.

Length of male about 24; wing about 9 (evidently moulting in the present bird and may be longer); tail about 10.

The length of the female is about 21; wing 8; tail 8.

The bare skin of the face is crimson and the legs brown or dark flesh-colour.

73. THE NORTH-ARRAKAN SILVER-PHEASANT.

Gennœus cuvieri, (TEMMINCK).

MALE :—The upper plumage black, minutely vermiculated with pale buff; the feathers of the rump with a white fringe, preceded by a firm, broad, black band; the outer three pairs of tail-feathers black.

FEMALE :—The middle pair of tail-feathers dull chestnut, the others progressively with an increasing amount of black and a decreasing amount of chestnut, the two colours blending; the outermost feather almost entirely black.

VERNACULAR NAME :—*Yit*, Burmese.

IT is with some hesitation that I admit this species into my work.

In the British Museum there are three Silver-Pheasants which are labelled *G. cuvieri.* These birds were at one time living in the Zoological Gardens of London, and their skins came to the Museum about 1867. It is not easy to trace the history of menagerie birds which died thirty or more years ago; but there seems reason to believe that these three specimens came from Arrakan.

Of these birds, one, in my opinion, clearly belongs to our next species, the South-Arrakan Silver-Pheasant. The other two may, I think, represent the Silver-Pheasant of Northern Arrakan, for they are quite distinct from any other Burmese species; and we know of no bird of this group from the large tract of country termed Northern Arrakan. A distinct species of Silver-Pheasant may very well be expected to occur in this part of Burma, and by admitting these birds into my list I am in hopes that sportsmen may assist in clearing up the matter.

On the assumption, therefore, that our two birds, a male and a female, represent the North-Arrakan species, I shall proceed to describe them:—

The male has the crest glossy black. The whole upper plumage and the visible portions of the closed wings are glossy bluish black with very fine, numerous, pale buff vermiculations, more or less across the shaft. These vermiculations are so fine that they may be said to consist of a series of minute dots. Each feather of the rump and lower back has a broad white fringe and a preceding firm, broad, black band occupying the space between the fringe and the first vermiculation. The tail is black with very narrow, oblique, pale buff lines, these lines progressively decreasing in number and extent, the three outer pairs of feathers being practically black. The whole lower plumage is a glossy black.

The female has the upper plumage and wings reddish brown, each feather edged paler and some of the small feathers of the wing edged with whitish. The two middle tail-feathers are chestnut stippled with black, the others with a progressively decreasing amount of chestnut and an increasing amount of black, the outermost feather being almost entirely black.

Length of the male about 23; wing 8½; tail 10. Length of the female about 21; wing 8; tail 8. The legs are brown or dark flesh-colour, and the skin of the face crimson.

74. THE SOUTH-ARRAKAN SILVER-PHEASANT.

Gennæus oatesi, Ogilvie Grant.

MALE :—The whole upper plumage black, very finely vermiculated with white; the feathers of the rump with a narrow white fringe, not preceded by any black band, the first vermiculation being almost in contact with the fringe and the others closely following.

FEMALE :—The tail chestnut throughout, with black oblique lines and mottlings which decrease in number progressively from the middle to the outer feathers.

Vernacular Name :—*Yit*, Burmese.

The South-Arrakan Silver-Pheasant is abundant along the road which crosses the Arrakan hills from a point on the Irrawaddy river, opposite Prome, to Tonghoop on the Arrakan coast. It is not known how far to the south and north of this road the present species is found.

The following is a description of a pair of these birds shot in a wild state, the skins of which are in the British Museum.

The male has the crest glossy black. The whole upper plumage and the wing-coverts are black, with very numerous, fine, white vermiculations running more or less across the shaft. The exposed part of the quills of the closed wing are obliquely barred with white. Each feather of the lower back and rump has a narrow but unmistakable white fringe, but no preceding black band, owing to the frequency of the vermiculations, the first of which is quite close to the fringe. The outer web and the internal half of the inner web of the two middle tail-feathers are black with oblique white lines; the remainder of these two feathers is largely white; the other tail-feathers are black, diagonally barred with white, the white bars progressively decreasing in number, the outer tail-feathers being chiefly black. The whole lower plumage is glossy black.

The female has the crest brown. The whole upper plumage and the wings are reddish brown, minutely vermiculated and stippled with black, each feather edged paler and some of the wing-coverts with a white fringe and a preceding fine black line. The throat is pale brown. The lower plumage is reddish brown, many of the feathers with a broad yellowish shaft-streak, edged with blackish. The middle three pairs of tail-feathers are pale chestnut, closely and obliquely barred with black; the others are deep chestnut, mottled with black, chiefly on the inner web.

Length of the male about 24; wing 9¼; tail 11. Length of the female about 21; wing 8¼; tail 8½. The legs are brown or dark flesh-colour, and the skin of the face is crimson.

75. THE LINEATED SILVER-PHEASANT.

Gennæus lineatus, (VIGORS).

MALE :—The whole upper plumage black, uniformly and finely vermiculated with white, the lines being across the shafts or slightly oblique ; with white streaks on the lower plumage ; no fringes on the rump.

FEMALE :—The neck and mantle with spearhead-shaped white marks ; the inner quills of the wing without any buff bars.

VERNACULAR NAMES :—*Yit*, Burmese ; *Sinklouk*, Talain ; *Poogik*, Karen.

THE Lineated Silver-Pheasant appears to have a wider distribution than any of the other Silver-Pheasants : a fact probably due to its being a bird of the low country.

The range of this species extends from the southern coast-line of Pegu, probably up to about the first defile of the Irrawaddy river, where the hills close in on both sides, and the country in the immediate vicinity of the river becomes mountainous and bars the further progress of this Pheasant to the north. Dr. Anderson procured this bird at Mengoon, which is four miles above Mandalay, on the right bank of the river. This is the most northern locality in which we know this Pheasant to be found; but, as I have remarked above, it probably ranges to the first defile, some fifty miles higher up the river.

This species has been met with at one or two points on the right bank of the Irrawaddy, but this river may be considered to be approximately the western limit of the distribution of this Pheasant.

To the east the range of this bird is bounded by the mass of hills which skirt Burma and divide it from Siam and the Shan States. Commencing at the south, we find that Colonel Bingham obtained this species in the Thoungyin valley; the late Mr. Davison at Papun; Major Wardlaw Ramsay in the hills east of Toungoo; and quite lately Major G. Rippon has sent me a specimen shot on the Fort Stedman road, below Nampandet, a locality lying on about the 21st degree of north latitude, and in 96½° east longitude. These same hills, with their numerous spurs, as they run north, approach the Irrawaddy more and more, and finally some of the spurs actually touch the river at the first defile.

Mr. Hume informs us that this Pheasant occurs as far south as Tavoy, but inasmuch as in the Hume Collection there are no specimens of this bird from any locality even so far south as Moulmein, I think there may be some mistake about the occurrence of this species at the former place.

Throughout the large triangle formed by the sea coast, the Irrawaddy river and the chain of hills bounding Burma on the east, the Lineated Silver-Pheasant is found in more or less abundance. It is a bird essentially of the hills, and it will not be met with in the delta of the Irrawaddy, nor in the plains which border this river and the Sittang. Directly, however, rising ground is reached, this Pheasant is observed; and on the Pegu Hills, which run up north from Rangoon into Upper Burma, it is extremely common. It is, however, a bird of low elevation, and it will not be found above 2000 feet. At Papun this species is replaced by the next on the hills which rise above this level.

The Lineated Silver-Pheasant prefers dry forests and hillsides covered with bamboo, but it is also found in the evergreen forests which clothe large tracts on the eastern slopes of the Pegu Hills. It is generally met with in pairs or parties of three or four. This bird is not very shy, and it frequently comes out to feed on roads and footpaths. When observed it creeps stealthily away, and can seldom be made to fly unless very hard pressed or taken by surprise.

The ordinary note of alarm of this Pheasant is a low guttural cry frequently repeated. At the breeding season, apparently like other Pheasants of this group, the Lineated Pheasant makes a drumming sound by flapping its wings and striking them against its body. This sound may be imitated by holding a pocket-handkerchief by two opposite corners, one in each hand, and jerking the hands apart as frequently as possible.

I have never seen this Pheasant fly into a tree; but it does so, we are told, when pursued by a dog.

The Lineated Pheasant breeds in March and April. The nest is a hollow scratched out of the ground and lined with bamboo-leaves, and is usually at the foot of a clump of bamboos or of a small tree. The eggs, which are six or seven in number, resemble the eggs of the common hen, have very little gloss and are of a buff colour. They measure from 1·75 to 1·95 in length and from 1·4 to 1·5 in breadth.

In the male the crest is glossy black. The upper plumage and the wing-coverts are black, very finely and closely vermiculated with white, these vermiculations being at right angles or slightly oblique to the shaft. The exposed parts of the quills of the closed wing are obliquely barred with white. The two middle tail-feathers are white, with a little black mottling on the basal half of the outer web; the other tail-feathers progressively with more black and less white, the outermost feather being black with narrow diagonal white lines. The lower plumage is black, streaked with white; the position and number of these streaks varying in different individuals, the streaks being sometimes distributed over the whole lower plumage and sometimes confined to the sides of the breast and body only.

The general colour of the upper plumage of the female is olive-brown, with a decided rufous tinge, stippled minutely with black or brown; the sides of the neck and the whole mantle with numerous spearhead-shaped white marks. The two middle tail-feathers are rufous, mottled with black chiefly on the outer web; the other tail-feathers are irregularly barred and marked with black, white and chestnut. The throat is whitish. The lower plumage is chocolate-brown, streaked with white, the streaks being narrow and not more than about one-sixth of an inch wide at the broadest part.

Length of male about 27; wing about 9½; tail up to 12½. Length of female about 21; wing about 8½; tail about 7½. Legs brown; irides reddish brown; bill greenish; naked skin of the head crimson. Weight up to 3 lb.

76. THE SALWEEN SILVER-PHEASANT.

Gennæus sharpii, n. sp.*

MALE :—The whole upper plumage black, each feather with white lines parallel to the margin of the feather; with white streaks on the lower plumage; no fringes on the rump.

FEMALE :—Neck and mantle with spear-head-shaped white marks; inner quills of the wing with narrow oblique buff bars.

VERNACULAR NAME :—*Yit*, Burmese.

THE Salween Silver-Pheasant inhabits the higher hills which separate Burma from Siam and the Shan States. Whereas the Lineated Silver-Pheasant does not occur above 2,000 feet elevation, the present species is apparently found at greater heights. There are four specimens of this Pheasant in the British Museum, and if we look into the localities where they were obtained, we shall find that they are all situated at a considerable elevation. Two specimens, a male and a female, were obtained at Dargwin, 18 miles north of Papun, a police stockade standing at an elevation of 2500 feet. One specimen, a male, was shot at Kollidoo, 28 miles N. by W. of Papun at the elevation of 3500 feet; and the fourth specimen, a male, was obtained by Major Wardlaw Ramsay in the Karen Hills, east of Toungoo, which rise to 6000 feet and are seldom at any point below 3000 feet.

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* I have much pleasure in naming this species after my friend Dr. Bowdler Sharpe.

If we examine the Silver-Pheasants from Papun itself, which is only 200 or 300 feet above the sea, and from Kadintee, which place Mr. Hume informs us is in low hills 30 miles N.W. of Papun, we find them to be typical examples of the Lineated Silver-Pheasant. It would therefore seem established that the Lineated and the Salween Silver-Pheasants, although they are found together in the same district, yet affect different zones of altitude.

This species probably extends a considerable distance into Siam and the Southern Shan States.

It is this species which Mr. Hume, first in "Stray Feathers" (vol. vi., p. 437) and afterwards in the "Game Birds of

India" (vol. i., p. 203), and Mr. Ogilvie Grant (Cat. Birds B. M., vol. xxii., p. 306), identify with Anderson's Silver-Pheasant. I have said enough on the subject in dealing with the latter species, and I can only repeat my conviction that the two birds are totally distinct.

This seems the place to notice a remark made by Mr. Hume some years ago ("Stray Feathers," vol. vi., p. 521). He assures us that he compared his specimen of this species from Tenasserim with a Pheasant from Bhamo and found the two precisely similar. This Bhamo specimen is not in the Hume Collection, but it seems to me extremely probable that the bird was not Anderson's Silver-Pheasant, as Mr. Hume evidently presumed it to be, but a specimen of my next species, the Ruby-Mines Silver-Pheasant. This latter bird no doubt occurs in the Bhamo District, as well as in the Ruby-Mines District. The present species and the Ruby-Mines bird are certainly very much of the same type, and might he considered alike by some naturalists. To Mr. Hume, the coarser markings, the longer tail and the red feet of the one species, as against the finer markings, the shorter tail and the flesh-coloured feet of the other, might not appear matters of any importance. Moreover, also, the Bhamo skin may have been a badly prepared, or possibly defective, native skin; for in those days, long before Upper Burma was annexed, no European would have been allowed to go to the tracts where the Ruby-Mines Pheasant is found.

The male has the crest glossy black. The upper plumage is black, each feather of the mantle, upper back and wing-coverts with five or six white lines on each web, curved and parallel to the margin of the feather. The white lines on the visible parts of the quills in the closed wings are coarse and about a quarter of an inch apart. The rump-feathers are marked like those of the back, but with finer and more frequent white lines, and there is no trace of a white fringe at the tips. The tail and the lower plumage resemble the same parts in the Lineated Silver-Pheasant.

The female of this species differs from the female Lineated Silver-Pheasant in having the inner quills of the wing barred with wavy, narrow lines of buff and blotched with black, and in having the white streaks on the lower plumage much broader, about a quarter of an inch wide at the widest part.

Length of male about 30; wing about 10; tail about 14. Length of female about 24; wing about 9; tail about 9½. The legs are flesh-coloured, the irides brown, the bill bluish horny and the skin of the face crimson. Weight of male 2¾ lb.

77. THE RUBY-MINES SILVER-PHEASANT.

Gennœus rufipes, n. sp.

MALE :—The whole upper plumage white; the web of each feather with four or five black lines, parallel to the margin of the feather; tail 18 inches in length or more; legs red.

FEMALE :—Not known.

VERNACULAR NAME :—*Yit*, Burmese.

WHEN I visited the Ruby-Mines in 1895, I acquired a specimen of this very distinct species. Having at the time no means of comparing it with other species of this group, I identified it with *G. andersoni* when writing my list of the Birds from the Ruby-Mines (Journ. Bom. N.H. x., p. 112).

This Pheasant occurs in the Ruby-Mines District, and it will probably be found also in the mountains of the southern parts of the Bhamo District and throughout the Northern Shan States.

The allied Chinese Silver-Pheasant may be observed hereafter in the eastern parts of the Shan States. Like the present species, the male has red legs. The tail is much longer, however, and there is more white in the plumage.

The male of the present species has the crest glossy black. The whole upper plumage and the wing-coverts are white, each feather with four or five firm black lines on each web, running parallel to the margin of the feather. The exposed parts of the quills in the closed wing are black with broad oblique white bars. The whole lower plumage is glossy black. The tail-feathers are obliquely barred with black and white, except the inner web of the middle pair of feathers, which is white.

Length of male about 34; wing about 10; tail 18 or more. The skin of the face is crimson and the legs are bright red.

The female of this species is not known. The female of the allied Chinese species, *G. nycthemerus*, has the entire plumage sepia brown except the hinder part of the crest, which is black. The two middle tail-feathers are pale sepia brown, and the others are much mottled and barred with black.

THE JUNGLE-FOWL.

The Jungle-Fowl in all essential particulars closely resemble our domestic fowls. Three species are found within the limits of this work. One is peculiar to Ceylon, another to the southern half of India, and the third is widely distributed over Northern India and the whole of the Indo-Burmese countries.

The males of the Jungle-Fowl are furnished with a large fleshy comb and a pair of wattles. The throat and, with the exception of the ears, the whole of the sides of the head are naked. The plumage is of brilliant colours, and the feathers are mostly hackled, or long and pointed. There is a strong spur on each leg. The tail is composed of fourteen feathers, of which the middle ones are long and curved. The tail is divided into two halves which are compressed together, back to back.

The females are of plain plumage. They have no wattles, and the comb is only indicated by a slight roughness on the front part of the crown, just above the bill. Only the feathers of the mantle are hackled. The tail is short but, as in the male, compressed and divided into two halves which are folded together. In dried specimens of females of this group, the tail generally presents a flat appearance. In the female of the Grey Jungle-Fowl, the whole head is feathered except a space round the eye. In the females of the other two species a great part of the throat and of the sides of the head is naked, or scantily clothed with plumelets and bristles.

Jungle-Fowl go about in flocks and are polygamous.

The males undergo a partial moult at the commencement of the rains, when they lose the long hackles of the neck and the longer tail-feathers. At the usual autumn moult these are regained.

78. THE RED JUNGLE-FOWL.

Gallus gallus, (LINNÆUS).

MALE:—The inner quills of the wing broadly margined on the outer web with chestnut; lower plumage black.

FEMALE:—Lower plumage rufous; feathers of the mantle black edged with yellow.

VERNACULAR NAMES:—*Jangli-murghi*, *Ban-murghi*, Hind.; *Bunkokra*, Bengal, Assam; *Natsu-pia*, Bhutia; *Pazok-tchi*, Lepcha; *Tau-gyet*, Burmese; *Kura*, Chittagong.

THERE are but few specimens of the Red Jungle-Fowl from India proper in the Hume Collection, and it is difficult to give the western limit of its range with any degree of accuracy. This species certainly occurs in Chamba, probably the most western locality in the Himalayas where it is found. The British Museum contains skins of this bird from Umballa and Saharunpur. Proceeding south we reach Chairkhari and Punnah. According to Messrs. Hume and Marshall the Red Jungle-Fowl is met with in both these localities. Following the range farther south we are informed by the same authors that this species occurs near Pachmarhi. The next point is Raipur in the Central Provinces, whence there are several skins of this species in the British Museum. South of Raipur there are numerous localities from which this Jungle-Fowl has been recorded, and the line of western limit would appear to run from Raipur to the junction of the Godaveri and Indrawati rivers, and thence along the former river to the coast.

East of the line thus roughly indicated, and south of the Himalayas from Chamba to the extreme eastern portion of Assam, and thence down to the extreme southern point of Tenasserim, the Red Jungle-Fowl would appear to be found in all suitable localities. It occurs up to an elevation of about 5000 feet.

To the east this species extends through the Shan States to Siam, Cochin China and Hainan, and to the south through the Malay peninsula to many of the islands.

Jungle-Fowl are very generally distributed, but they are much more abundant on the hills than elsewhere. They are very partial to localities where cultivation and thick cover are found together, and bamboo jungle has particular attractions for them. Notwithstanding the general shyness of Jungle-Fowl, they may frequently be met with quite close to villages which are surrounded by jungle, and in such cases it is not always easy to distinguish the wild birds from the village poultry.

Although Jungle-Fowl may sometimes be seen in large flocks, they are usually in small parties, one cock being accompanied by two or three hens. The crow of the cock, which resembles that of the domestic cock, may be heard at all times of the year, and usually at all hours of the day, but more frequently of course in the morning than at any other time. The hen cackles like the domestic hen, both when alarmed and after laying an egg.

The Red Jungle-Fowl appears to lay from March up to June. There are probably two broods a year. The nest is made on the ground, of dry leaves and grass, and is placed at the foot of a bush or clump of bamboos. The eggs, which vary from five to eleven in number, have a fair amount of gloss and are of a pale yellowish buff colour. They vary in length from

1·6 to 2·03 and in breadth from 1·27 to 1·5.

The male has the crown and the hackles of the upper part of the mantle rich orange-red with blackish shaft-streaks; the hackles of the lower part of the mantle golden yellow with black shaft-streaks. The back is black, generally hidden by the longer hackles. The rump is rich glossy maroon, the feathers terminating in rich orange-red tips as they approach the tail. The tail is black, glossed with green. The small coverts near the bend of the wing are glossy black, the next series rich maroon, and the third series glossy black. The first ten quills of the wing are black, the remainder black with the outer half of the outer web chestnut. The hackles at the base of the throat are orange-red and the whole lower plumage deep black.

The female has the crown mixed rufous and brown. The mantle is black, each feather margined with pale straw-yellow. The whole upper plumage and the visible portions of the closed wings are yellowish brown or buff, much freckled and marked with black and with white shafts. The tail is dark brown, mottled at the edge of the feathers with buff. The whole lower plumage is rufous, brightest on the breast, and all the feathers with pale shafts.

Length of male up to 28; wing about 9; tail up to nearly 15. Length of female about 17; wing about 7½; tail about 6. Legs bluish; comb and naked skin of the head, red; irides red; bill dusky. Weight up to 2 lb. 4 oz.

79. THE GREY JUNGLE-FOWL.

Gallus sonnerati, TEMMINCK.

MALE :—All the quills of the wing brown or black; lower plumage black, each feather with an ashy margin and an ashy shaft-streak.

FEMALE :—Lower plumage white, each feather margined with grey; the inner quills of the wing and the greater coverts not barred, but mottled with black.

VERNACULAR NAMES :—*Jangli-murghi*, Hind.; *Komri*, Mt. Abu; *Pardah komri*, Chanda Dist.; *Kombadi*, Deccan; *Adavi-kode*, Telugu; *Katukoli*, Tamil; *Koli*, *Kadkoli*, Canarese.

THE Grey Jungle-Fowl occurs over a great portion of Southern India, from the extreme south up to a line which is thus indicated by Mr. Hume :—"From the sea to its junction with the Indravati, the valley of the Godaveri indicates approximately its north-eastern limits. Thence a line drawn through Pachmarhi to the Nerbudda completes roughly its north-eastern boundary. Westwards the Nerbudda defines, I believe, its northern limits to within from 120 to 150 miles of the sea, where, crossing this river into the westernmost portions of the Vindyas, it runs up through Rewa Kantha and Mahi Kantha to Abu, and thence along the Arvalis to beyond the well-known Dasuri Pass, stragglers having even been obtained half way between this and Beawur."

Throughout the hill-ranges of Southern India, this species occurs commonly up to 5000 feet and occasionally up to 7000 feet.

The habits of this Jungle-Fowl appear to differ in few respects from those of the Red Jungle-Fowl. The following note by the late Mr. Davison is interesting. He wrote:—"This species occurs all through the Wynaad in the Mysore country, ascending quite to the summit of the Nilghiris, and is pretty abundant. The undergrowth of many of the forests on the Nilghiris is almost entirely composed of *Strobilanthes whitiani*, and when this seeds, as it does once in about seven years, the Jungle-Fowl assemble in vast numbers to feed on the seed. They do this too when the bamboo seeds. In places where, as in the vicinity of Ootacamund and Coonoor, they are much disturbed they become exceedingly shy and wary, but where they are not much disturbed they are easily approachable. The crow of the cock is peculiar, and might be syllablized *Kuk-kah-kaha-kuk*, and is quite unlike that of the Red Jungle-Fowl. The call of the female is something like *Kukkun-kuk kun*. The cock crows chiefly in the mornings and evenings and sometimes also during the day in cloudy weather. The cock goes through a partial moult, losing his hackles and central tail-feathers during the rains."

The Grey Jungle-Fowl has probably two, if not more, broods in the year, for the eggs have been found in various parts of India in almost every month.

The nest is a small collection of leaves and sticks placed on the ground in thick cover. The eggs, which number from seven to thirteen, are oval in shape, and vary from creamy white to buff in colour. They measure from 1·68 to 2·05 in length and from 1·21 to 1·5 in breadth.

In the male, the hackles on the mantle are black, each feather with a grey margin, a white spot, and a somewhat yellow patch at the tip resembling sealing-wax. The feathers of the back and rump are black with white shafts and narrow grey margins. The upper tail-coverts are glossy purple. The tail is glossy black. The wing-coverts are black, the middle series with long, oval, terminal chestnut tips, resembling sealing-wax, The first ten quills of the wing are brown, the others black. The lower plumage is black, each feather with a grey shaft-streak and margin, and sharply pointed. The sides of the body are dashed with chestnut.

In the female the head is brown, streaked with rather bright buff. The feathers of the mantle are dark brown, each feather with a bright buff shaft-streak and a paler buff margin. The remaining upper plumage and the wing-coverts are yellowish brown, thickly speckled with black, the feathers of the back and coverts with narrow white shaft-streaks. The first ten quills are dark brown, the others yellowish brown, thickly speckled and mottled with black. The tail is blackish, mottled with rufous. The throat is pale grey and the lower plumage white, each feather margined with deep grey.

Length of male about 28; wing 9; tail up to 16. Length of female about 16; wing 8; tail 5½. Legs yellowish; irides red; bill horny brown or black; comb, wattles and bare skin crimson. Weight up to 2 lb 8 oz.

80. THE CEYLON JUNGLE-FOWL.

Gallus lafayetti, LESSON.

MALE :—All the quills of the wing brown or black; breast and upper belly bright orange red.

FEMALE :—The belly white marked with black; all the inner quills of the wing and the greater coverts broadly barred with black and buff.

VERNACULAR NAME : — *Wali-kukula*, Ceylon.

THE Ceylon Jungle-Fowl is restricted to the island of Ceylon, in many parts of which it appears to be abundant.

The habits of this bird do not differ in any important particular from those of the preceding species. Colonel Legge informs us that the call of the cock resembles the words "George Joyce, George Joyce" preceded by a monosyllabic note sounding like *tek*. The alarm-note sounds like *clock*, *clock*.

These Jungle-Fowl appear to breed throughout the year. The eggs, varying in number from six to twelve, are deposited on a few leaves in a hollow of the ground. They are creamy white in colour, but some eggs are occasionally stippled with brown or reddish grey. They measure from 1·75 to 2 in length and from 1·24 to 1·49 in breadth.

The male has the crown dull orange. The neck and mantle are golden yellow, streaked with black. The back and all the smaller wing-coverts are brilliant orange-red, streaked with black. The rump is glossy violet, each feather edged with bright chestnut-red. The tail is black, glossed with blue. The greater wing-coverts and all the quills of the wing are brown or black. There is a gorget of brilliant violet below the throat. The whole breast and the greater part of the belly are brilliant orange-red with brown streaks. The remainder of the belly and the thighs are black.

The female has the crown blackish and the remainder of the head and the whole neck, which is covered with very short feathers, brown, mottled with rufous buff. The mantle is dark brown, the feathers mottled and edged with rufous buff. The back, rump, tail-coverts and the smaller wing-coverts are yellowish brown, minutely freckled with black. The tail is dull chestnut, irregularly barred and mottled with black. The greater wing-coverts and the quills in the closed wings are broadly barred with black and buff. The breast is rich buff, mottled with black, each feather with a pale buff patch occupying the central part. The belly is white, each feather with a central black patch and interrupted black margin.

Length of male up to 28; wing about 9; tail 13 to 15; legs yellowish; irides yellow; naked skin of the head purplish red; comb red with a yellow central patch; bill reddish brown. Weight up to 2 lb. 5 oz. Length of female about 14; wing 7; tail 5; legs brownish; irides yellowish olive; bill brown above, yellowish below.

THE FIREBACK-PHEASANTS.

The Pheasants of this group are fine handsome birds, found in South-eastern Asia and some of the islands.

Both sexes have the side of the head bare to a considerable extent, and both have a thick bushy crest, rather more than one inch in length, composed of feathers which are narrow at the base but become gradually broader as the tip is approached. The tail of the male bird is curved and drooping, the two halves compressed together as in the domestic cock. The tail of the female is shorter and straight, but compressed as in the domestic hen. The male has one immense spur on each leg.

The females of the Pheasants of this group depart from the ordinary rule and are rather handsomely plumaged.

81. VIEILLOT'S FIREBACK-PHEASANT.

Lophura rufa, (Raffles).

MALE :—Upper plumage black with the exception of the lower back and rump, which are maroon chestnut.

FEMALE :—Upper plumage chestnut with fine black vermiculations.

Vernacular Names :—None known.

Vieillot's Fireback-Pheasant has been observed only in the extreme south of Tenasserim at Bankasoon and Maliwun. The proper home of this species is the Malay Peninsula, Siam and Sumatra.

The late Mr. W. Davison had exceptional opportunities for studying the habits of this Pheasant when he was in Tenasserim. He remarked :—"These birds frequent the thick evergreen forests in small parties of five or six; usually there is only one male in the party, the rest being females, but on one or two occasions I have seen two males together; sometimes the males are found quite alone. I have never heard the males crow, nor do I think that they ever do so; when alarmed both males and females have a peculiar sharp note, exceedingly like that of the large black-backed squirrel (*Sciurus bicolor*). The males also continually make a whirring sound with their wings which can be very well imitated by twirling rapidly between the hands a small stick in the cleft of which a piece of stiff cloth has been transversely placed. I have often discovered the whereabouts of a flock by hearing this noise. They never come into the open, but confine themselves to the forests, feeding on berries, tender leaves, and insects and grubs of all kinds; and they are very fond of scratching about after the manner of domestic poultry and dusting themselves. When disturbed they run rapidly away, not in different directions, but all keeping much together; they rise at once before a dog, getting up with a great flutter, but when once well on the wing, fly with a strong and rapid flight; they seldom alight again under a couple of hundred yards, and usually on the ground, when they immediately start running."

In the British Museum there is an egg of this bird which was laid in confinement at Singapore. It is of an oval shape, buffy white in colour, and measures 2·2 by 1·65.

The male has the whole plumage, with the crest, glossy bluish black, except the lower back and the rump, which are maroon chestnut. The sides of the body are streaked with white. The two middle pairs of tail-feathers are white; the next pair chiefly white on the inner web, black on the outer; the remainder all black.

In the female the whole upper plumage, crest, and the visible parts of the closed wings are chestnut, minutely and closely vermiculated with black. The tail is maroon, the middle two or three pairs of feathers indistinctly marked with black wavy lines. The throat is white; the foreneck chestnut streaked with white; and the breast and the sides of the body dark brown or black, each feather laterally margined with white and tipped with chestnut. The belly is black, each feather margined with white.

Length of male about 28; wing about 11; tail about 10. Length of female about 24; wing about 10; tail about 8. Legs bright red; irides pale red; bill horny to white; facial skin blue. Weight up to 5 lb.

THE MEGAPODES.

GALLINÆ—PERISTEROPODES.

The Megapodes differ from the other Gallinaceous Birds in having a large hind toe placed on the same level as the three front toes. They also differ in that they do not incubate their eggs but leave them to be hatched in a mound of earth or rubbish, the necessary heat being apparently developed by the decay of these substances.

The Megapodes occur chiefly in Australia and the islands of the Pacific Ocean, but one species extends to the Nicobar Islands and consequently must be included in my volume.

In the Nicobar Megapode the sexes are alike. The tail is short, rounded and composed of twelve feathers. There is no crest, and the crown of the head is frequently bare of feathers. The skin round the eye is naked. The claws of the foot are extremely long. The general aspect of the Nicobar Megapode is similar to that of a small domestic hen. The young birds are hatched feathered, and can fly almost at once.

The most remarkable fact about the Megapodes is the mode in which the eggs are incubated. Each pair of birds commences to build a mound by scraping together sand and rubbish. At intervals during the construction of the mound the hen lays an egg, which is covered up, and then another till as many as ten eggs are laid; the mound is then completed and the eggs left to be hatched. Some mounds are as much as five feet in height and thirty feet in circumference.

Mr. Hume thus describes the chicken:—"The quite young bird, when rather less in size than a quail, is a uniform snuff-brown all over, everywhere densely feathered, even about the throat and neck, and with the feathers of the forehead and the top and back of the head much longer *actually*, and not merely *relatively*, than in the adult; no bare space in front of or round the eye, no tail developed, only a large bunch of fur-like feathers, but the wings large, strong and well formed; the bill very short."

82. THE NICOBAR MEGAPODE.

Megapodius nicobariensis, BLYTH.

The hind toe large and placed on the same level as the front toes.

VERNACULAR NAMES :—None known.

THE Nicobar Megapode is restricted, so far as we know at present, to the Nicobar Islands. Mr. Hume tells us that his party saw and shot them on every single island except the three northernmost: Chowra, Batty Malve and Car Nicobar. With regard to Mr. Hume's surmise that these Megapodes may occur on Table Island, one of the Andaman Group, I am able to state positively that there is not a trace of them on this island now. Captain Shopland and myself visited this island very frequently, in connection with the lighthouse there; we explored every corner of it and collected every living thing we could find, but there were no Megapodes nor even traces of their mounds.

Mr. Hume, who had splendid opportunities for observing these birds, says :—"The Megapode never wanders far from the sea-shore, and throughout the day it keeps in thickish jungle, a hundred yards or so above high-water mark. It never, so far as I observed, emerged on to the open grass hills that form so conspicuous a feature in so many of the Nicobars, but throughout the day hugged the belt of more or less dense jungle that in most places along the whole coast supervenes abruptly on the white coral beach. At dusk, during moonlight nights, and in the early dawn, glimpses may be caught of them running about on the shore or even at the very water's edge, but during daylight they skulk in the jungle.

"They are to be met with in pairs, coveys and flocks of from thirty to fifty. They run with great rapidity and rise unwillingly, running and flying just like jungle hens. They often call to each other, and when a party has been surprised and dispersed, they keep on talking to each other incessantly, half a dozen cackling at the same time. The note is not unlike the chuckling of a hen that has recently laid an egg. . . . When by any fortunate chance you can get them, they they are very easy to shoot. . . . As game they are unsurpassed. The flesh, very white, very sweet and juicy, loaded with fat, is delicious."

Concerning the remarkable nesting habits of these Megapodes I shall quote from the late Mr. Davison's remarks:—"I have seen a great many mounds of this bird. Usually they are placed close to the shore, but on Bampoka and on Katchall I saw two mounds some distance inland in the forest. They were composed of dried leaves, sticks, etc., mixed with earth, and were very small compared with others near the sea-coast, not being above three feet high and about twelve or fourteen feet in circumference; those built near the coast are composed chiefly of sand mixed with rubbish and vary very much in size, but average about five feet high and thirty feet in circumference; but I met with one exceptionally large one on the Island of Trinkut, which must have been at least eight feet high and quite sixty feet in circumference. It was apparently a very old one, for from near its centre grew a tree about six inches in diameter, whose roots penetrated the mound in all directions to within a foot of its summit, some of them being nearly as thick as a man's wrist. I had this mound dug away almost to the level of the surrounding land, but only got three eggs from it, one quite fresh and two in which the chicks were somewhat developed. . . . I made careful enquiries among the natives about these birds, and from them I learnt that they usually get four or five eggs from a mound, but sometimes they get as many as ten; they all assert that only one pair of birds are concerned in the making of a mound, and that they only work at night. When newly made, the mounds (as I was informed) are small, but are gradually enlarged by the birds. The natives never dig a mound away, but they probe it with a stick or with the end of their *daos*, and when they find a spot where the stick sinks in easily, they scoop out the sand with their hands, generally, but not always, filling in the holes again after they have abstracted the eggs. . . . The eggs are usually buried from 3½ to 4 feet deep, and how the young manage to extricate themselves from the superincumbent mass of soil and rubbish seems a mystery."

The eggs are usually elliptical in shape, sometimes oval, and very large for the size of the bird. The shell is enveloped in a thin chalky flake which is of rather a bright pink colour and is easily scraped off. Where scraped off, it leaves a pure white chalky shell below. The egg is without gloss and without markings. The eggs vary in length from 3·01 to 3·4 and in breadth from 1·9 to 2·25.

The sexes are alike both in size and plumage. A band of grey encircles the back of the head. The crown is sometimes denuded of feathers, but when feathered it is, together with the whole upper plumage, olive-brown with a rufous tinge. The wings and tail are dull rufous brown. The lower plumage is grey with a tinge of brown on the breast.

Length up to 17; wing up to 9½ and tail about 3; legs greenish horny in front, reddish behind and at the sides; irides light brown; bill yellowish horny; bare skin of head red. Weight rather more than 2 lb.

THE BUSTARDS.

OTIDES.

THE Bustards somewhat resemble the Gallinaceous Birds in external structure, but they have a much longer leg and neck. The tarsus and a portion of the tibia are quite bare of feathers, and the hind toe is entirely wanting. The front toes are very short.

The Bustards frequent large open plains where they can have a good view all round. They are extremely shy and difficult to approach. A few species are polygamous, and others pair together for the nesting season. Some species lay only one or two eggs; others four. They lay their eggs in a hollow on the ground. The young are able to run soon after they are hatched.

The male Bustards have various ornamental tufts and plumes, and in some species the females also assume them. The males of some have a partial or complete spring moult, and in this case their summer plumage is different to that of the winter. No two species of Bustards agree in general structure or in the character of their ornamental tufts and plumes, and Dr. Bowdler Sharpe in his catalogue of these birds has very rightly placed each of the Indian Bustards in a separate genus.

The males of two species of Bustards have a large gular pouch, the use of which is not known, but it appears to be a sexual ornament, and to be inflated at will at the breeding season, and possibly at other times. The male of the Great Bustard, when courting, not only inflates this pouch, but deflects the feathers of the wings and tail in such a wonderful manner that it must be seen to be realised. A case of Bustards in the British Museum shows this wonderful performance to perfection.

As the Bustards differ so much from each other in general structure and ornamentation, I shall now give briefly the characters of each Indian species, first premising that the Bustards and the Floricans differ in the length of their legs. In the Bustards, the tarsus is shorter, being less than one-third the length of the wing, whereas in the Floricans the tarsus is longer, being nearly half the length of the wing.

THE GREAT BUSTARD.—No seasonal change of plumage in either sex; male with a gular pouch, a short crest, and a bunch of bristle-like feathers or whiskers on each side of the throat; female without a gular pouch and whiskers, but with a short crest; male very much larger than female; sexes not very dissimilar in plumage.

THE GREAT INDIAN BUSTARD.—No seasonal change of plumage in either sex; male with a gular pouch, a short crest, and the feathers at the base of the neck much lengthened and very soft in texture; female without a pouch, with a shorter crest, and the feathers at base of neck less developed; male very much larger than female; sexes closely alike in plumage.

THE INDIAN HOUBARA-BUSTARD.—No seasonal change of plumage in either sex; both sexes with a long crest, and a ruff down the sides of the neck and across the breast; male much larger than female; sexes quite alike in plumage.

THE LITTLE BUSTARD.—Seasonal change of plumage in male only; male in summer plumage with lengthened feathers on the hindneck; both sexes with an extremely short crest at all seasons; female larger than male; sexes very dissimilar in plumage in summer; approximately similar in winter; the fourth quill of wing in the male truncated.

THE BENGAL FLORICAN. — Seasonal change of plumage in male only; male in summer with a full crest and the feathers of the throat, foreneck and breast lengthened; those on the breast forming a large tuft; male in winter and female at all seasons with a short crest; female larger than male; sexes in summer very dissimilar in plumage, in winter quite alike.

THE LESSER FLORICAN. — Seasonal change of plumage in male only; male in summer with ear-tufts, each consisting generally of three feathers four inches long with some shorter ones; the long feathers with a bare curled shaft and an oval expansion at the tip; both sexes at all seasons with a short crest; female larger than male; sexes in summer very dissimilar in plumage, in winter quite alike; first ten quills of wing with tips very attenuated and pointed.

I cannot say how far the character is

general, but in some of the Bustards the bases of the feathers of the body-plumage are pink. This pink colour is not visible till the feathers are lifted up. I have been able to examine museum specimens only, some of them very old; and consequently the pink tinge on the bases of the feathers may have disappeared with time. Sportsmen and others should investigate this character when handling freshly shot birds. In the Floricans the pink tinge is present even when the skin is old.

83. THE GREAT BUSTARD.

Otis tarda, LINNÆUS.

Length of the tarsus less than one-third the length of the wing.

Exposed part of the first ten quills of the wing wholly blackish.

Outer tail-feathers white with a dark bar.

Crown of head grey.

MALE :—With whiskers.

FEMALE :—Without whiskers.

VERNACULAR NAMES :—None known.

THE Great Bustard has only once been observed in India. It was in December 1870 that one of Mr. Hume's collectors shot a female bird out of a flock that was seen near Mardan, not far north of Peshawur. This specimen is now in the British Museum.

This fine bird occurs throughout Central and South-western Asia, and a great portion of Europe and North Africa.

I quote the following remarks of Mr. Dresser :—"The Great Bustard frequents open, flat ground, preferring grassy plains or cultivated land, but avoiding localities near human habitations, and places where there are trees and bushes and where it cannot command an uninterrupted view over a large tract of country. It is peculiarly wary and shy ; and it is almost impossible to approach it within gun-shot range. Hilly country, and especially mountains, it avoids altogether, and is never met with in the woodlands or forests. It especially frequents cultivated fields, and is often found in those where rapeseed, wheat, and rye have been sown. It passes the night in the open fields, choosing places where it cannot be approached without taking alarm, and is so watchful that it is impossible to surprise it when asleep. It leaves its night-quarters at the first break of dawn, and during the hot summer days will often take a siesta during the hottest part of the day, but is then equally wary and difficult of approach. It flies with more ease than one would imagine, considering the size and weight of the bird, and has no difficulty in taking wing, at once springing up into the air without first taking a step or two, and appears to prefer taking safety in flight rather than by making use of its legs. When it flies it stretches out its neck and legs and is thus easily distinguishable. . . . Early in spring, according to the mildness of the season, they commence to prepare for the cares of nidification; and the flocks then by degrees break up. The males fight desperately for the possession of the females, and may at that season of the year be seen strutting about, acting not unlike a Turkeycock."

The Great Bustard has a peculiar and very disagreeable smell when alive, and its flesh is not now held in much esteem. Dr. J. E. T. Aitchison informs us that when he was on the Afghan Delimitation Commission, a flock of these Bustards was met with, and "Lieut. Rawlins succeeded in shooting one, but the stench of the bird was so great that he almost thought of leaving it; it was so dark that he scarcely knew what it was that he had got, and the scent was almost enough to put off any one from even a new acquisition." Notwithstanding this, however, we are told that the flesh was eaten next day and found excellent.

The nest of the Great Bustard is a mere depression in the soil in a corn-field where the female can lie well concealed. She usually lays two eggs. The eggs vary much in shape, but the majority are regular ovals. The ground-colour is deep olive-brown, olive-green or buff, and the egg is covered with spots and blotches of brown and numerous underlying markings of grey or pale purple. In length the eggs vary from 2·7 to 3·2, and in breadth from 2·2 to 2·4. They have very little gloss.

The male Bustard has the head and the greater part of the neck grey. The lower part of the hindneck, the whole upper plumage, the middle tail-feathers, and a great part of the wing-coverts, are cross-barred with black and chestnut, the remaining coverts being greyish white. The first ten quills of the wing are blackish; the next partly or wholly white. The lateral tail-feathers are white with a dark bar near the tip and with some rufous in front of the bar, the amount of rufous increasing as the feathers approach the middle of the tail. The throat, the whiskers and the foreneck are pale grey. Across the breast there is a band of chestnut marked with black. The lower plumage is white.

The female resembles the male, but is

much smaller and without whiskers. The throat is white, and with this exception the whole head, neck, and upper breast are grey. The chestnut pectoral band of the male is in some degree indicated at the sides of the breast.

Male: length about 45; wing about 25; tail about 11. Female: length about 33; wing about 19; tail about 8. Legs grey; irides brown; bill lead-grey. A fine male occasionally weighs 30 lb., but 20 lb. is a more usual weight. The female shot in India, as above noticed, weighed 8½ lb.

84. THE GREAT INDIAN BUSTARD.

Eupodotis edwardsi, (GRAY).

Length of the tarsus less than one-third the length of the wing.
Exposed part of the first ten quills wholly blackish.
Outer tail-feathers fulvous freckled with black.
Crown of head black.

MALE :—Larger ; wing about 27.
FEMALE :—Smaller ; wing about 21.

VERNACULAR NAMES :—*Toogdar*, *Gurayin*, Punjab ; *Sohun Chirya*, *Gugumbher*, *Hookna*, Gwalior, Jhansi, etc. ; *Hoom*, Marathi ; *Kara-dhouk*, *Maldhouk*, Deccan ; *Gurahna*, Sind ; *Buttmeka*, *Bat-myaka*, Telugu ; *Heri-hukki*, *Arl-koojina-hukki*, Canarese ; *Kanalmyle*, Tamil.

THE Great Indian Bustard is peculiar to India and inhabits a considerable portion of the peninsula. It is found in the Punjab and less commonly in Sind. To the east it ranges as far as the Jumna, and approximately up to a line, roughly speaking, connecting Delhi and Sambalpur in the Central Provinces. Southwards it is met with down to about the 11th degree of north latitude, being universally distributed over the whole country except the western coast.

Dr. Jerdon says:—"The Bustard frequents bare open plains, grassy plains interspersed with low bushes, and occasionally high grass *rumnahs*. . . . Towards the close of the rains and in the cold weather before the long grass is cut down, the Bustard will often be found, at all events in the heat of the day, concealed in the grass, but not for the purpose of eating the seeds of the Roussa grass, as the writer * above alluded to imagines, rather for the large grasshoppers which abound so there and which fly against you at every few steps you take. During the cold weather the Bustard frequently feeds, and rests during the day likewise, in wheat fields. When the grass and corn are all cut and the bare plains no longer afford food to the Bustard, it will be found along the banks of rivers where there is long grass mixed with bushes, or the edges of large tanks, or low jungle where there is moderately high grass, or it wanders to some district where there is more grass; for though they do not migrate, yet Bustards change their ground much according to the season, and the supply of grasshoppers and other insects. The hen birds, remarks the writer quoted above, generally congregate together during the rains, are very timid, and frequently when a sportsman is pursuing a single one, she will attempt to seek safety, fatally for herself, in some large bush, particularly if the gunner turn aside his head and affect not to see her at the moment of hiding. The cock birds at this season feed a mile or so apart from the hens, and stretching their magnificent white necks, stride along most pompously. . . . The Bustard is polygamous, and at the breeding season, which varies very greatly according to the district, from October to March, the male struts about on some eminence, puffing out the feathers of his neck and throat, expanding his tail and ruffling his wings, uttering now and then a low deep moaning call heard a great way off. . . . The Bustard has another call heard not un frequently, compared by some to a bark or a bellow; chiefly heard however when the bird is alarmed. . . . When raised it generally takes a long flight, sometimes three or four miles, with a steady continued flapping of its wings, at no great height above the ground, and I never found that it had any difficulty in rising, not even requiring to run one step."

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* Dr. Jerdon here refers to a writer in the *Sporting Review*.

Dr. Jerdon, in giving the breeding season above as from October to March, must, I think, have meant to say March to October, for it is during this period only that nests and eggs of this bird have been found by Mr. Hume's numerous correspondents. The nest is a depression in the ground in open wastes or in fields of stubble of the larger millets or in clumps and patches of high grass. Only one egg is laid. The variation in the colour of the eggs of this Bustard is very remarkable. The ground-colour is usually green combined with brown in varying proportions, sometimes a yellowish stone-colour. Some eggs are dull, others highly glossy. The markings on the eggs vary very much in extent and intensity, but they are usually some shade of reddish brown disposed in blotches and streaks.

In shape they are ovals, and they measure from 2·75 to 3·42 in length and from 2·05 to 2·45 in breadth.

The male has the crown and the feathers of the crest black. The sides of the head, the throat and the whole neck are white in old birds, mottled with brown in younger ones. The feathers at the base of the neck are long, soft, and very ample. The whole upper plumage, the tail, and a great part of the visible portions of the closed wings are fulvous or sandy buff very finely and closely vermiculated with black; the larger wing-coverts black tipped with white. The first ten quills of the wing are blackish, the others are tipped with white. The tail is tipped with dark brown and terminally with white. A broad blackish band extends across the breast, somewhat interrupted in the middle. The lower plumage is white with the flanks dark brown.

The female is much smaller than the male, but closely similar in plumage. The mottlings on the neck are coarser, and there is a white band over the eye. The feathers at the base of the neck and the crest are rather shorter.

Male: length up to 50; wing about 27,

tail about 13. Female: length up to 38; wing about 21½. Legs dull yellow; irides yellow; bill greyish brown. A fine male is said to weigh as much as 28 lb., a female about 10 lb.

85. THE INDIAN HOUBARA-BUSTARD.

Houbara macqueeni, (GRAY).

Length of the tarsus less than one-third the length of the wing.
Exposed part of the first ten quills of the wing largely white.
A ruff down the sides of the neck.

MALE :—Larger; wing about 16.

FEMALE :—Smaller; wing about 15.

VERNACULAR NAMES : — *Tiloor*, *Boombara*, Punjab; *Taloor*, Sind.

THE Indian Houbara-Bustard is apparently only a winter visitor to India, arriving at the end of August or the beginning of September, and leaving again in March or April.

This Bustard is found in the plains of the Punjab, Sind, Rajputana, Northern Guzerat, and Cutch, and its limits to the east appear to be the Jumna River as far as Delhi, and thence a line drawn to Baroda.

In summer this bird is found as far west as Mesopotamia, and it has an apparently wide range in Central Asia. It is occasionally met with in Europe.

The India Houbara frequents the level or undulating semi-desert plains which abound in the west of India. "Here," writes Mr. Hume, "the Houbara trots about early and late, squatting under the shade of some bush during the sunniest hours of the day, feeding very largely on the small fruit of the *Ber*, or the berries of the *Grewia*, or the young shoots of the lemen grass and other herbs; now picking up an ant or two, now a grasshopper or beetle, and now a tiny land-shell or stone, but living chiefly as a vegetarian and never with us, to judge from the hundreds I have examined, feeding on lizards, snakes, and the like, as the Great Bustard certainly does, and the African Houbara is said to do."

Although this Bustard has not yet been known to breed in India, there is good reason to believe that the nest may yet be found in Sind. The late Lieut. H. E. Barnes, a very shrewd observer, wrote:—"I feel sure that a few at least remain to breed, both in Sind and Cutch; a friend of mine avers that he has seen eggs in the latter place, but as he did not preserve them, he may have made a mistake, but he is too good a sportsman not to know a Houbara when he sees one. Mr. Doig had excellent reasons for believing that the Houbara bred in the desert between Godra and Renahoe. Colonel Butler long ago placed on record the remark that a perfect egg had been extracted from the oviduct of a female at the island of Hanjam, off the Mekran coast, in the month of April, and that one or two pairs were breeding there."

In the British Museum there are eggs of this Bustard from the Persian Gulf, Mesopotamia and the Altai mountains in Central Asia. They are oval in shape, with little or no gloss. The ground-colour is generally speaking olive-brown and the shell is covered with blotches and clouds of dark brown, reddish brown and grey. Seven eggs measure from to 2·30 to 2·58 in length and from 1·62 to 1·82 in breadth.

In this species the two sexes are quite alike in coloration, but the female is smaller than the male and has the crest, neck-ruff and pectoral ruff rather less developed.

The crest of this Bustard springs from the middle of the crown, the front feathers being white with black tips and the hinder ones entirely white. A ruff commences at the ears, passes down the sides of the neck to the shoulders, and is continued across the breast. The feathers of this ruff are entirely black on the upper portion of the neck; lower down they are longer and are white tipped with black; and at the base of the neck they are entirely white and fully six inches in length. The ruff across the breast consists of soft broad feathers of a bluish grey colour. The whole upper plumage, the middle pair of tail-feathers and the greater part of the visible portions of the closed wings are fulvous, barred and vermiculated with black; the other tail-feathers are rufous, dotted with black, crossed by two bluish bars, and tipped white. The first five quills of the wing are white with black tips, the others progressively with more black and with less white. The throat is white; the foreneck speckled with fulvous; and the lower plumage white.

Male: length up to 30; wing about 16; tail about 10. Female: length up to 27; wing about 15; tail about 9. Legs dull yellow; irides yellow; bill dusky, tinged with green below. A fine male weighs 5¼ lb., and a fine female 3¾ lb.

86. THE LITTLE BUSTARD.

Tetrax tetrax, (LINNÆUS).

Length of the tarsus less than one-third the length of the wing.
Exposed part of the first ten quills of the wing largely white.
No ruff down the sides of the neck.

MALE:—The fourth quill of the wing abruptly shortened.

FEMALE:—The fourth quill of the wing graduated between the third and fifth.

VERNACULAR NAME:—*Chota tilur*, Hind.

THE Little Bustard is found in Southern Europe, North Africa and Central and South-Western Asia. It appears to be everywhere more or less migratory, and its movements are difficult to follow and to understand. This Bustard visits India in the winter, and is at that time fairly common in the Punjab, west of the Indus river, occasionally straggling into portions of the North-Western Provinces. Colonel Biddulph observed it at Gilgit at the end of March, and conjectures that it may breed there, but Dr. Scully is of a different opinion.

There is very little to be gathered regarding the habits of this Bustard from Indian writers, and I shall therefore quote some remarks of the late Mr. Seebohm concerning it. Speaking of the bird as he found it on the Danubian steppes, he says:—"It is a partial migrant, arriving at its breeding grounds in flocks early in April, which are dispersed in May. It is so much less than the Great Bustard, that by the middle of May the grass and the flowers hide it completely from view. The females sit very close and are difficult to find, but the males betray themselves by their curious note. As you drive slowly across the steppes, your attention is arrested by a distant cry, resembling the sound of the syllable *spurrtz*. By following with the waggon in the direction whence it proceeds for a hundred yards or more, you may generally put up the bird, frequently within shot, but if followed on foot there is little or no chance of securing it. The flight is quite different to that of the Great Bustard, more resembling that of the Partridge than that of a Heron. The wings are moved with great rapidity and the flight is very straight, though not very slow. The beats of the wing are so rapid that they make quite a loud whirring sound, and they show more white when flying than the Great Bustard does. In many respects their flight resembles that of a butterfly or of a Snow-Bunting. We never saw two males together during the breeding season. The nest can only be found by accident. We were driving rather quickly across the steppe, anxious to reach Kalarath before dark, when suddenly a female Little Bustard rose within ten feet of the waggon and was speedily dropped by our Jäger, who was sitting gun in hand by the driver. We jumped out of the carriage, and in a quarter of a minute found the nest, containing four eggs. The hollow was deeper than that of the nest of the Great Bustard, and there was a distinct nest of dry grass and weeds, though very slight; it was about seven inches across and well concealed by tufts of a kind of lucerne."

In the British Museum there is a fine series of the eggs of this Bustard from Algeria, Tangiers, France, the Danube steppes, Turkey and South Russia, including the four eggs found by Mr. Seebohm as above narrated. They are all highly glossy, and in shape they are oval, elliptical or pyriform; hardly two eggs being of the same shape. The ground-colour varies from pale green to dark olive-green, and a few are buff or stone-colour. They are all blotched and streaked with pale reddish brown or brown, but in such a pale manner that at a short distance many of the eggs appear unmarked. In length they vary from 1·92 to 2·23, and in breadth from 1·43 to 1·6.

The male in summer plumage has the forehead and crown fulvous much marked with black; the throat, the sides of the head, and a band round the back of the head bluish grey. The whole neck is black with a band of white round the back of the head immediately next to the bluish grey band; and another white band runs diagonally down each side of the neck, the two meeting in front. Below the black of the neck there is a broad white band succeeded by a narrower black band. The feathers of the hindneck are much lengthened. The lower plumage is white. The upper plumage and much of the visible portions of the closed wings are fulvous banded with black; the remaining portions of the closed wings are white. The first ten quills of the wing are white at the base and at the tip, the intermediate portion being black, the amount of white increasing and the black diminishing regularly from the first quill to the tenth. The other quills are all white. The tail is white banded with black, and the feathers covering the tail above are chiefly white.

The male in winter plumage has no lengthened feathers on the hindneck. The black, white and bluish-grey of the head and neck are lost, and are replaced by fulvous marked with black, the throat only being white. The whole body, wings and tail are the same as in summer.

The female bird at all seasons resembles the male in winter plumage in general coloration, but the breast and the sides of the body are barred and spotted with black. The upper plumage and wings are coarsely marked with black, and the fulvous colour predominates over the black.

Male: length about 18; wing about 9½; tail nearly 4. Female: length about 19; wing 10; tail quite 4. Legs dull yellow; irides reddish brown; bill blackish with some green or yellow at the base. Weight about 2 lb.

87. THE BENGAL FLORICAN.

Houbaropsis bengalensis, (GMELIN).

Length of the tarsus nearly half the length of the wing.

First ten quills of the wing of ordinary shape, presenting no peculiarities of structure.

Of large size; wing 13 and upwards in length.

MALE :—Smaller; wing about 13.

FEMALE :—Larger; wing about 14.

VERNACULAR NAMES :—*Charas*, *Charat*, *Charj*, Hind.; *Dabar*, Nepal Terai; also *Ablac*, male, and *Bor*, female; *Ooloo Moora*, Assamese.

ACCORDING to Mr. Hume, the Bengal Florican is found in Eastern Bengal, the valley of Assam, the Bhutan Duars, and those portions of Bengal, Oudh and the North-Western Provinces lying north of the Ganges River. It is probable that Dr. Jerdon's statement that this bird spreads through the valley of the Jumna into Rajputana, the Cis-Sutlej States, and parts of the Punjab, is erroneous. At the same time it must be remembered that this bird is apparently rare, for in the Hume Collection there are only four skins of this species, and that it is therefore somewhat premature to attempt to define the limits within which this Florican is found.

With regard to Assam, this bird appears to be found up to its extreme eastern limits. Colonel Graham, as quoted by Messrs. Hume and Marshall, writes:—"The Bengal Florican may be said to extend throughout the Assam Valley, from the Manas River on the west to the Mishmi Hills, east of Sadiya, on the east"; and again Captain C. R. Macgregor remarks: "I have shot Florican beyond Sadiya under the Abar Hills, on the *chars* of the Brahmaputra between Sadiya and Pulia, notably on the "Lalli Chapori," under the Naga Hills in the vicinity of Jaipur, near Dibrugarh, on the Bisnath Plain, and along the whole country extending from Tezpur in the Darrang district up to North Lakhimpur." Mr. Damant also remarks that he has seen this Florican in the low ground and *chars* which lie along the foot of the Garo Hills. This species occurs in Tipperah and Sylhet, but it has not yet been procured in Manipur.

Readers of Messrs. Hume and Marshall's work are familiar with Mr. Hodgson's charming account of this Florican. It is too lengthy to be reproduced here, and I must be content to quote Dr. Jerdon's briefer note. He says:—"It frequents large tracts of moderately high grass, whether interspersed with bushes or otherwise, grass *chars* on rivers, and occasionally cultivation, but it appears to be very capricious in its choice of ground, several often congregating in some spots to the exclusion of others that seemed equally favourable for it. From February to April it may be seen stalking about the thin grass early in the morning, and it is noticed to be often found about newly-burnt patches. . . . . Birds at this time, as well as during the earlier part of the year, are usually found singly, sometimes in pairs, male and female not far distant from each other."

The nesting season lasts from May to July or August. At this period the male bird is in the habit of rising into the air some ten or twenty feet with a quick motion of his wings, raising his crest and puffing out his neck and breast, and afterwards dropping down to the ground, humming the while in a peculiar tone. The females then approach him. It is probable that this Florican pairs with a single female, and is not polygamous.

The nest appears to be a mere hollow in the ground, with or without a few blades of grass as a lining. The eggs are probably two in number. There is but a single egg in the Hume Collection, and it was found by Mr. Shillingford in Purneah in June. It is oval in shape with very little gloss. The ground-colour is pale olive-green and the shell is smeared and somewhat longitudinally streaked all over with pale reddish brown. It measures 2·6 in length by 1·76 in breadth.

The flesh of this Florican is considered very delicious, and Mr. Hume states that it is amongst the best birds for the table with which India furnishes us.

The male bird in summer plumage has the whole head, neck and lower plumage deep black, the head being fully crested, and the feathers on the throat, foreneck and breast very long and ample; those on the breast forming a large tuft. The upper plumage and the inner quills of the wing are black mottled with buff. The wing-coverts and all the quills except the innermost are white, with the exception of the first three, which have their outer portions black. The middle tail-feathers are black mottled with fulvous, the other with less fulvous, the outer feathers being entirely black with white tips.

The male in winter plumage and the female at all seasons have the whole upper plumage, wings and tail pale fulvous much marked in various ways with black, the tail in addition being barred with black. The quills of the wing are black mottled with fulvous. The lower plumage is pale fulvous, the foreneck and breast being mottled with black.

Male: length up to 25; wing about 13; tail about 7. Female: length up to 28; wing about 14; tail rather more than 7. Legs dull yellow; irides brown (*Jerdon*), yellow (*Hume*); bill brown above, yellowish below. The weight of a fine bird is said to be as much as 5 lb.

88. THE LESSER FLORICAN.

Sypheotis aurita, (LATHAM).

Length of the tarsus nearly half the length of the wing.

First ten quills of the wing of very peculiar shape, the terminal portions being very narrow and extremely pointed.

Of small size ; wing less than 10 inches.

MALE :—Wing not exceeding 8.

FEMALE :—Wing exceeding 9.

VERNACULAR NAMES :—*Ker mor*, Guzerat; *Tun mor*, Deccan and Marathi ; *Chini mor*, Belgaum ; *Khartitar*, Bhil ; *Likh*, *Chota Charat*, N.W. Provinces ; *Bursati*, *Kala Tugder*, Rohtak, Gurgaon ; *Charas*, *Chulla Charas*, S. India ; *Kannoul*, Canarese ; *Niala nimili*, Telugu ; *Wurragu koli*, Tamil.

THE Lesser Florican is found over nearly the whole continent of India, being resident in some parts and a partial migrant in others ; but its movements are not apparently of any great extent, nor have they been sufficiently studied to enable us to state with any degree of exactness what they are.

To the east this species has been obtained in Purneah and Nadiya in Bengal, but not commonly, and the 88th degree of east longitude may be considered its eastern limit; a specimen has occurred as a straggler much farther east, namely at Sandoway on the Burmese coast. From Bengal it ranges along the base of the Himalayas up to the river Jumna, but this bird apparently does not occur beyond this river nor in any part of the Punjab. On the west this Florican occurs rarely in Sind and as a straggler has been observed on the Mekran coast. As for its limits in the south, Dr. Jerdon states that this species is found down to the southernmost districts. Within the large area indicated by the above limits, the Lesser Florican seems to be found in greater or less abundance according as the country is suitable to its habits or not.

The haunts of the Lesser Florican are extensive plains covered with patches of grass and low jungle and at times cornfields in which the crops are not too high. Dr. Jerdon writes :—" It feeds chiefly in the morning and is then easily raised, but during the heat of the day it lies very close and is often flushed with difficulty. I have known an instance of one being killed by a horse stepping on it. . . . I have found the cock bird commencing to assume the black plumage at the end of April, and have killed them with the black ear-tuft just beginning to sprout, hardly any other black feathers having appeared. In other instances I have noticed that these ear-tufts did not make their appearance till the bird was quite mottled with black. The full and perfect breeding plumage is generally completed during July and August. At this season the male bird generally takes up a position on some rising ground, from which it wanders but little, for many days even ; and during the morning especially, but in cloudy weather at all times of the day, every now and then rises a few feet perpendicularly into the air, uttering at the same time a peculiar low croaking call, more like that of a frog or cricket than that of a bird, and then drops down again. This is probably intended to attract the females, who, before their eggs are laid, wander greatly ; or perhaps to summon a rival cock, for I have seen two in such desperate fight as to allow me to approach within thirty yards before they ceased their battle."

This Florican has the habit, when running or walking, of raising its tail "the lateral feathers diverging downwards, while those of the centre are the most elevated, as is seen in domestic fowls," etc. (*Jerdon*).

Birds of both sexes of this species are in the habit of springing up into the air during the nesting season with a low clucking cry.

The Lesser Florican breeds chiefly during the months of September and October in the neighbourhood of Sholapur; in April and May in Southern India; and in July, August and September near Deesa. The eggs, varying in number from two to four, are laid in a slight hollow of the ground in thin grass jungle or low scrub jungle. In shape they are generally oval, sometimes almost spherical and occasionally pyriform. They are fairly glossy and smooth. The ground-colour is generally some shade of dull green and the egg is covered with numerous blotches and streaks of brown, reddish brown and olive-brown. The eggs measure from 1·77 to 2·06 in length, and from 1·5 to 1·7 in breadth.

The male bird in summer has the chin white ; the head, the ear-tufts, the neck, the whole lower plumage and the outer wing-coverts deep black. The lower part of the hindneck and a broad band on the wing are white. The upper plumage and the tail are fulvous, beautifully vermiculated and blotched with black, the tail with several narrow but well-defined black bars. The first three quills are brown, the others brown, barred and mottled with fulvous.

The male in winter and the female at all seasons have the whole upper plumage and the visible portions of the closed wings and tail bright fulvous, the crown and the short crest blotched with black, the neck finely speckled with black, the wings sparingly and irregularly barred with black and the remaining upper plumage, together with the tail, blotched, clouded, and variously marked with black, the tail having in addition some black cross-bars. The quills of the wing are dark brown, barred and mottled with fulvous, the first three less so than the others. The foreneck has two irregular black lines running down its whole length. The lower plumage is fulvous, somewhat pale on the belly, the breast and the sides of the body much barred and mottled with black. The long feathers lying concealed under the wing are nearly black.

Male: length up to 19; wing up to 8; tail about 4. Female: length up to 21; wing nearly 9½; tail about 5. Legs dull pale yellow; irides yellowish; bill chiefly yellow. The weight sometimes reaches to nearly 1¾ lb.

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